

Digitized by the Internet Archive
in 2008 with funding from
Microsoft Corporation

STUDIES IN HISTORY ECONOMICS AND PUBLIC LAW

EDITED BY
THE FACULTY OF POLITICAL SCIENCE
OF COLUMBIA UNIVERSITY

VOLUME NINETY-FIVE

New York
COLUMBIA UNIVERSITY
LONGMANS, GREEN & CO., AGENTS
LONDON: P. S. KING & SON, LTD.
1920-1921

STUDIES IN HISTORY, ECONOMICS AND PUBLIC LAW

EDITED BY THE FACULTY OF POLITICAL SCIENCE OF
COLUMBIA UNIVERSITY

Volume XCV]

[Number 1

Whole Number 215

RAILROAD CAPITALIZATION

A Study of the Principles of Regulation
of Railroad Securities

BY

JAMES C. BONBRIGHT, Ph.D.

Instructor in Finance, Columbia University



New York
COLUMBIA UNIVERSITY
LONGMANS, GREEN & CO., AGENTS
LONDON: P. S. KING & SON, LTD.

1920

THE UNIVERSITY OF CHICAGO

PREFACE

When Congress included in the Transportation Act of 1920 a provision giving to the Interstate Commerce Commission full and exclusive control over the issue of securities by interstate carriers, it brought to a close one of the sharpest and most protracted controversies that have been waged in the field of railroad regulation. This controversy was concerned with the question of the public interest in railroad capitalization. For years, stock watering has been attacked in and out of Congress as one of the most vicious practices of private railway managements; for years, popular discussions have held it responsible for exorbitant rates and inefficient service. Yet, until recently, railway officials have insisted that neither stock watering nor any other form of overcapitalization is a matter of public concern; and, until recently, their views have prevailed with the lawmakers, to the extent, at least, of preventing public control. Now all this is changed. First the states, and at last the federal government have seen the necessity of financial control as a means of securing reasonable rates and adequate service.

But though the principle of public control is now a settled issue, the problems connected with this control are by no means settled. Railways, we say, should be properly capitalized. But what is proper capitalization? And how is it to be secured under government control? These are questions on which Congress and the Interstate Commerce Commission will have to spend much thought and effort. Success or failure in finding the correct answers will be one of the deciding factors in the larger issue of private *versus* government ownership.

The present work is a study of some of these problems. It makes no attempt to cover the entire subject of security regulation—a subject almost as intricate and comprehensive as the kindred subject of rate regulation—but confines itself to the more fundamental principles and the more important issues. Special attention is given to the problem of stock watering. Stock watering is an evil for which three very different remedies have been proposed. The first remedy is to prevent the practice by requiring that no shares be issued at less than their par value; the second is to allow stock watering to continue, but to render it harmless by giving full publicity to the actual investment; the third is to meet the problem by issuing shares of stock without par value. Or, to put it in other words, the first measure would make the par values indicate the true investment; the second would expose the par values as a pure fiction; the third would abolish par values entirely. Each of these three methods has won the support of eminent authority; each has been put into practice by various state governments. Which of the three should be adopted by the federal government is a problem discussed at length in the present study.

For a brief review of the points developed in this study, the reader is referred to the summary or conclusion at the end of each chapter. Chapter I analyzes the effect of capitalization on the rate level and on the quality of the service. An extended discussion of the relation between capitalization and rates seemed to be called for, not merely because of the wide differences of opinion which have hitherto prevailed on the subject, but also because of the practical bearing of this problem on the objects and methods of security regulation. The conclusion of the first chapter is that capitalization influences rates and services primarily through its effect on railway credit. Chapter II, therefore, considers precisely how capitalization may influence the

corporate credit—to what extent overcapitalization weakens the financial structure. A discussion of the evil effects of overcapitalization naturally raises the question, What is proper capitalization? In Chapter III this problem is treated under the heading, “the Basis of Capitalization.” A study of the experience of the various state commissions leads to the conclusion that the whole attempt to make capitalization correspond to the corporate assets is impracticable, and that it should be abandoned in favor of the plan of issuing shares of stock without par value. Chapter IV considers in detail this recent financial device and defends it against current criticisms. A concluding chapter is devoted to a discussion of three of the special problems connected with the federal regulation of railway securities.

The material for this study is drawn largely from the reports of decisions rendered by the various state public service commissions on the applications of public utility companies for permission to issue securities. State commissions are the pioneers in the field of security regulation, and their experience will serve as a guide to the federal government. In most states, control over security issues extends both to railways and to local public utilities, but the general principles involved are identical despite some differences in detail. Therefore, although the present treatise is written with special reference to the problem of the railways, the writer has not hesitated to cite as precedents decisions with respect to public utilities of all classes. In these citations, the abbreviation “P. U. R.” refers to the *Public Utilities Reports, Annotated* (Rochester, N. Y., Lawyers Cooperative Publishing Company, 1915-).

Among the unofficial literature on the subject, the author owes much to the writings of Barron, Heilman, Ignatius, and Ripley. The last named author's work on *Railroads, Finance and Organization* has been a constant and valued

companion in the preparation of this study. More specific references to the writings of these and other authors are given in the footnotes and in the bibliography at the end.

Several specialists have been kind enough to read parts of the manuscript. For this service the author is much indebted to Dr. John Bauer, and to Professors Henry R. Hatfield, Roy B. Kester, Hastings Lyon, T. W. Van Metre, and Allyn A. Young. Each of these men has made valued suggestions and criticisms resulting in the modification of manuscript. The study as a whole has been made under the direction of Professor Seligman. To him, most of all, the writer would express his deep gratitude for constant help and stimulating guidance.

COLUMBIA UNIVERSITY, JUNE, 1920.

TABLE OF CONTENTS

	PAGE
CHAPTER I	
THE EFFECT OF CAPITALIZATION ON RAILWAY RATES AND SERVICE	13
I. Effect of capitalization on rates	14
A. Influence of capitalization on a company's own rate policy	16
B. Influence of capitalization on rates under government control	20
1. Capitalization and "fair value"	21
Capitalization as evidence of the actual investment	22
Capitalization as a separate factor in "fair value"	25
Conclusions on capitalization and "fair value"	29
2. Capitalization and the rate of return	31
The fair rate.	32
The expedient rate.	33
C. Conclusions on the effect of capitalization on rates	36
II. Effect of capitalization on service	38
III. Conclusions of chapter	43

CHAPTER II

THE INFLUENCE OF CAPITALIZATION ON RAILWAY CREDIT	45
(1) Bonds and other evidences of indebtedness	46
(2) Preferred stock	48
(3) Common stock	49
Stock watering not the only method of inflating market values	57
Summary	61

CHAPTER III

THE BASIS OF CAPITALIZATION 64

(1) Rate-making value	67
(2) Original investment	74
(3) Actual cost	77
(4) Market value	82
(5) Earning capacity	82
Conflicting practices of commissions.	88
Practical difficulties of equalizing capitalization and investment . . .	91
Attempt to equalize capitalization and investment unnecessary . . .	97
Summary.	98

CHAPTER IV

SHARES OF STOCK WITHOUT PAR VALUE 100

History of the proposal	101
Advantages.	106
Alleged objections	111
Limitations of the measure as a remedy for the evils of stock- watering	124
Proper scope of application—should it include preferred stock? . .	127
Should it be made compulsory?	129
Summary.	130

CHAPTER V

FEDERAL REGULATION OF RAILROAD SECURITIES 132

Provisions of the Transportation Act with respect to control of security issues	132
Control of the issuance price of shares of stock without par value. .	135
Restriction of indebtedness	139
Scaling down of existing capitalization.	146
Summary.	153

APPENDIX A

Court and commission decisions on the relation of capitalization to “fair value”	156
---	-----

APPENDIX B

Protection of credit as a factor in commission rate decisions . . .	162
---	-----

APPENDIX C

The Alton controversy 169

APPENDIX D

Bibliography on the regulation of the security issues of railroads
and other public utilities 186

INDEX 195

CHAPTER I

THE EFFECT OF CAPITALIZATION ON RAILWAY RATES AND SERVICE

GOVERNMENTAL control of railroad securities is favored as a necessary protection both to the investor and to the public. Obviously, however, the public interest is paramount, and the discussion in this treatise is entirely from that point of view. What the public demands of the railways is the best possible service at the lowest possible rates. Its chief concern in the regulation of railway securities must lie, therefore, in the possible effect of capitalization on rates and on service.

Very unfortunate has been the tendency in public discussion of railroad problems to emphasize the problem of rates to the exclusion of the problem of service. With respect to capitalization this tendency is particularly to be deplored, for the financial structure of railway corporations has a much more decided influence upon the quality of the service than upon the rate level.¹ Too often, this more serious charge against overcapitalization has been neglected in a vain attempt to prove a closer relation than really exists between securities and rates. It is nevertheless true that capitalization does have some effect on rates as well as on service. We therefore divide this chapter into two parts,

¹ S. O. Dunn, *Regulation of Railways* (New York, 1918), p. 136; W. Z. Ripley, *Railroads, Finance and Organization* (New York, 1915), p. 282.

the first part discussing the problem of rates, and the second part discussing the problem of service.

I. EFFECT OF CAPITALIZATION ON RATES

No railway problem has given rise to more dispute, or to greater extremes of opinion, than the question of the relation between the amount of outstanding securities and the transportation charges.¹ While public opinion has always held stock watering responsible for exorbitant charges, railway officials have constantly denied that capitalization has any effect whatever on rate schedules. As early as 1874, the opposing views were clearly set forth in the report of the "Windom Committee" of the United States Senate.² Of all the abuses with which the railways were charged, "none," said the committee, "have contributed so much to the general discontent and indignation as the increase of railway capital by '*stockwatering*,' and *capitalization of surplus earnings*. . . . Your committee are of the opinion that

¹ References on the relation between capitalization and rates: "Windom Committee," *Report*, 1874, 43d Cong., 1st Sess., Sen. Rep. 307, two pts., pt. ii, p. 142, *et seq.*; U. S. Industrial Commission, *Hearings* (1900-1902), vols. iv and ix, Index *s. v.* "Capitalization," also *Report of the Commission*, vol. xix, pp. 405, 618; U. S. Congress, House of Representatives, Committee on Interstate and Foreign Commerce, *Hearings, February 9 to March 17, 1914, on "Regulation of the Issuance of Stocks and Bonds by Common Carriers"*; Interstate Commerce Commission, *Twenty-second Annual Report*, 1908, p. 86; A. T. Hadley, *Railroad Transportation* (New York, 1885), pp. 122-24; James F. Hudson, *The Railways and the Republic* (New York, 1886), ch. vii; John M. Eshleman, in *Annals of the American Academy of Political and Social Science*, vol. liii (1914), pp. 148-61; National Association of Railway Commissioners, *Proceedings of Twenty-ninth Annual Convention*, 1913, pp. 115-223, 238-57; *Journal of Accountancy*, vol. iv (1907), pp. 327-49, "Railroad Overcapitalization, A Symposium"; E. S. Mead, *Corporation Finance* (New York, 1915), pp. 147-58; M. B. Ignatius, *The Financing of Public Service Corporations* (New York, 1918), pp. 267-68, 320-23.

² *Op. cit.*

stock inflation is wholly indefensible; that it necessarily produces increased charges, and promotes corrupt speculation, and hence should be prohibited."¹ But the justice of this view was vigorously challenged by spokesmen for the railways who testified before the committee. According to one of them, Mr. Edwin P. Worcester of the New York Central Railway, "there never was such a thing heard of as a company that increased its capital stock as an excuse or occasion for putting up rates. It could just as well put up rates if the business would bear it without increasing the capital, and, if able, pay double the rate of dividend."²

The same conflict of opinions has continued down to the present day.³ It found strong expression in the testimony before the Railroad Securities Committee in 1910. A statement by Judge Lovett before that committee is typical of the railway point of view. "I feel entirely warranted,"

¹ *Op. cit.*, pt. i, pp. 72, 76.

² *Ibid.*, pt. i, p. 74.

³ Although the general position of railway representatives has been as above indicated, there have been one or two exceptions. It would indeed be difficult to find more caustic arraignments of the practice of stock watering than have come from the pen of a railroad president, Mr. Charles Francis Adams, and of a banker, Mr. Henry Clews. The latter, referring to the prevalent custom of issuing large stock bonuses to railroad construction companies, remarked: "It is no exaggeration to characterize these transactions as direct frauds upon the public . . . they are essentially deceptive and unjust, and involve an oppressive taxation of the public at large for the benefit of a few individuals, who have given no equivalent for what they get" (*Fifty Years in Wall Street* [New York, 1908], p. 245). Cf. also Adams, "Railroad Inflation," *North American Review*, vol. cviii (1869), pp. 130-64. Very different from the position of Mr. Adams was that of his predecessor and successor as president of the Union Pacific Railway, Mr. Sidney Dillon, who wrote that "as a matter of reason and principle, the question of capitalization concerns the stockholders and the stockholders only. A citizen, simply as a citizen, commits an impertinence when he questions the right of any corporation to capitalize its properties at any sum whatever" (*North American Review*, vol. clii [1891], p. 446).

he said, "in stating that the railroad rates, both passenger and freight, prevailing throughout the United States to-day were not made, and were not in any wise influenced, by the bonds and stocks outstanding, and that the needs of the companies for interest on bonds and dividends on stock had nothing whatever to do with the fixing of the rates."¹

That these opposing views should have been held in the early days of our experience with railway problems is not to be wondered at; but that the divergence should have remained as wide as ever after half a century of railway history is indeed surprising. Perhaps the following study of the merits of the controversy may throw some light on the failure to reconcile the differences.

Transportation rates are usually determined, in the first instance, by the railway management; but they are subject to approval or revision by government, either through legislation or, more frequently, by order of a regulating commission. In our study of the effect of capitalization on rates we must look, then, on the one hand to the voluntary rate policy of the railway management and, on the other hand, to the principles of rate control by the government. Let us consider these two problems in turn.

A. INFLUENCE OF CAPITALIZATION ON A COMPANY'S OWN RATE POLICY

It is often assumed in popular discussions that railways and public utilities fix such rates as will enable them to earn interest and dividends on outstanding securities. From this it would follow, of course, that an excessive issue of stocks or bonds would result in excessive rates. Obviously, however, this assumption is fallacious; corporations are neither able nor willing to adjust their charges on any such basis. Their attempt is to secure a maximum profit, whether that

¹ *Statement of R. S. Lovett Before the Railroad Securities Commission, December 21, 1910 (New York, 1910?).*

be two per cent or twenty per cent on the stock. Charges are limited, either to the rates on competitive lines, or to so-called "monopoly price," based on the principle of "charging what the traffic will bear." A railway might double its capitalization, but it could not thereby stop competition nor increase the capacity of the traffic to bear higher rates. Rates, therefore, except for one qualification about to be mentioned, would remain the same. This fact has long been recognized by railway authorities; it was pointed out at the hearings of the Windom Committee in 1874, and by Hadley in 1885.¹ The wonder is that a fallacy so obvious as is contained in the contrary notion can have persisted to the present.

This conclusion, that increased capitalization would not cause a railway management to raise the rates, is subject to one qualification, a qualification also long ago pointed out by Hadley.² When a company is so overcapitalized that

¹ *Railroad Transportation*, pp. 122-4. See also an article by the same author on "Railway Abuses at Home and Abroad," *New Princeton Review*, November, 1886. An excellent recent statement of this principle is given by Edward S. Mead, *Corporation Finance* (New York, 1915), pp. 147-58.

² *Railroad Transportation*, pp. 122-24. In theory there is another qualification; namely, that capitalization may affect rates by influencing the amount of construction of competitive railways, thus increasing or decreasing the opportunities to charge monopoly prices. Strangely enough, writers have taken opposite views as to the effect of overcapitalization on competition. Some have held that it tends to stimulate competition by making the overweighted company less strong and formidable as a commercial fighter (Mead, *op. cit.*, p. 149; Clews, *op. cit.*, p. 247). Others have contended that the concealment of profits by means of stock watering tends to deter possible competitors. Of these two positions, the latter is the more plausible. It is strengthened by a further consideration; that overcapitalization, by contributing to railway failures, may discourage investments in railways and so may check competition. But from a practical point of view, the effect of overcapitalization on rates through its influence on competition is so indirect and problematical as to be hardly worth considering.

it finds difficulty in earning the expected rates of interest and dividend, it may resort to a short-sighted policy of rate making in order to secure the earnings required for the immediate future. Where a financially strong company might decide to reduce rates, hoping to be recompensed by gradual increase in traffic, a weak company would be unwilling to risk even a temporary decline in earnings for the sake of an ultimate gain. Conversely, where a prosperous railway would hesitate to raise rates for fear of injury in the long run to its traffic, the impecunious road would stop at nothing that might bring a temporary increase in its earnings. Perhaps one may state the point formally in this way: *The policy of any corporate monopoly with respect to charges (and services) is dictated by two considerations—first, by the desire to make maximum profits in the long run; second, by the desire to avoid even a temporary fall in profits below a certain minimum. Sometimes these two considerations conflict; and when they do conflict, the first usually predominates with financially strong companies,¹ the second predominates with financially weak companies.*

With local public utilities this influence of a company's financial position on its rate policy is sometimes an important factor. Conservatively capitalized, prosperous electric light companies, for example, have not infrequently reduced their rates below the maxima fixed by the regulating commissions, simply in order to build up business and to establish a good-will on the part of the public. But with the interstate railroads it is doubtful whether the principle has been to any considerable degree operative. Railroads are only to a limited extent monopolies; often they have been highly competitive. Competition has usually prevented a weak

¹ Not always, however; the controlling interests in a financially sound company sometimes adopt the short-sighted policy in order to sell out at top prices.

or bankrupt road from raising its rates. Some authorities have presented evidence tending to show that rates on overcapitalized railroads have been even lower than on the more conservatively financed lines.¹ The Alton, for example, underwent an upward revision of its capitalization at the beginning of the present century; but in spite of this increase, transportation rates declined materially. A similar situation prevailed on the Rock Island. One of the most excessively capitalized roads in the country is the Chicago Great Western Railway; yet its charges have been among the very lowest. The grossly overcapitalized Erie has charged lower average freight rates per ton-mile than the undercapitalized Lackawanna. Other similar instances might be cited.

Whether these cases really indicate an inverse correlation between capitalization and rates, or whether they are purely a matter of chance, could be proved, if at all, only by more careful statistical studies than have yet been made. Probably the latter explanation is correct; for it so happens that most of the overcapitalized railways that have been cited as charging low rates are located in unusually competitive territory. In theory, however, an actual relation of cause and effect is not out of the question. The very reasons that may induce an overcapitalized *monopolistic* railway to raise its rates may cause an overcapitalized *competitive* railway to lower them. In both cases the short-sighted desire to secure maximum immediate returns prevails. But in the one case this object would be attained by charging all that the present traffic will bear, while in the other case it would be attained by lowering rates so as to undercut competitors.

¹ "Windom Committee," *Report, op. cit.*, pt. ii, p. 142; U. S. Industrial Commission, *Report*, vol. xix, p. 413; F. A. Delano, *Commercial and Financial Chronicle*, vol. civ (1917), p. 318; Carl Snyder, *American Railways as Investments* (New York, 1907), pp. 64-5; Frederick Strauss, *The Relation Between Capital and Rates—an Address delivered at the University Club, New York City, March 7, 1912* (Buffalo, etc., 1912).

Our conclusions, then, as to the effect of capitalization on rates, when these rates are fixed by the railways themselves, is that some relation may exist, but that this relation is much less direct and of much less significance than is generally assumed in popular discussions.

B. INFLUENCE OF CAPITALIZATION ON RATES UNDER GOVERNMENT CONTROL

In these days of strict government regulation, it is far more important to study the factors that influence our courts and commissions in their rate decisions than to discuss the rate-making policy of the railway management. For the government, not the railway, has the last word. General rate levels are now limited, not to what the traffic will bear, but rather to what the Interstate Commerce Commission or the United States Supreme Court will bear.

If regulating commissions were to allow railway companies to charge such rates as would earn interest and dividends on all outstanding securities, the relation between capitalization and rates would be obvious. But as a matter of fact, no such simple relation prevails; the connection is more indirect. In order to understand this connection, we must have in mind the general principles which guide a commission or a court in a rate case.

The starting point in the theory of rate regulation is the principle of common law, now supported by state and federal statutes, that public service enterprises must charge "reasonable" rates. Until very recently, no test of reasonableness has been set by statute. But in the United States a standard has been developed by the courts, under their authority to review all rate regulations to determine whether they violate the constitutional guaranties against confiscation of property. According to these court decisions, a company must ordinarily be allowed to charge sufficient rates to earn a "reasonable return" on the "fair

value of the property being used by it for the convenience of the public." This so-called "valuation basis" of rate making has now been formally accepted by Congress, which has provided in the present Transportation Act that the Interstate Commerce Commission shall fix such rates as will permit each group of carriers to earn a "fair return on the aggregate value" of their railway property.¹

In determining the influence of capitalization in a rate case, we must pay regard to both of the above-mentioned factors: "reasonable" (or "fair") return, and "fair value." Does the amount of outstanding securities have any effect on the rate of return that a commission or a court would consider "reasonable?" Does it affect the estimate of the "fair value" of the property? Each of these questions must be answered before we can settle the relation between capitalization and rates. Let us consider these two points separately, first analyzing the *fair value*, and later discussing the *rate of return* on that value.

1. Capitalization and "Fair Value"

As every student of public utility problems knows, the courts have never set any definite standard of "fair value" for rate making. Usually they have accepted a valuation based on a compromise of different possible tests. What these tests may be is indicated in the leading case of *Smyth v. Ames*.² The famous dictum in that case reads as follows:

¹ The Act provides that, for a period of two years beginning March 1, 1920, the Commission shall fix a "fair" return equivalent to a rate of 5½ per cent of the aggregate property value but may, in its discretion, allow an additional half per cent to make provision for improvements. At the end of the two-year period, the rate of return is to be fixed by the Commission from time to time at such a point as the prevailing conditions may justify.

² 169 U. S. 466, 545 (1898).

We hold, however, that the basis of all calculations as to the reasonableness of rates . . . must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case.

On the basis of this dictum there are two distinct grounds on which the amount of capitalization might be given weight in estimating "fair value." First, it might be taken as evidence of "the original cost of construction" and of the "amount expended in permanent improvements;" second, it might be held to constitute in itself a vested right, to be honored at its face value. This second interpretation might follow from the fact that the dictum refers to the "amount and market value of its bonds and stocks" as separate items to be considered, distinct from the item of original cost. Let us discuss first the use of capitalization as *evidence* of the actual cost of the property.

Capitalization as evidence of the actual investment. In the determination of "fair value" for rate-making purposes, courts have held that one of the most important elements to be considered is the original cost of the property. Indeed, the recent tendency, on the part of some commissions at least, has been to make it the controlling test—a tendency to which some authorities think that the courts will soon accede. Unfortunately, however, the railways of this country failed to keep accurate records of their capital costs until required to do so under the amendment of 1906 to the Interstate Commerce Act. So far from making correct en-

tries of capital expenditures, many of the railways, prior to that date and to some extent even thereafter, deliberately made excessive charges to the capital account in order to conceal from the public and from the regulating commissions the true relation between profits and investment. The practice of stock watering went hand in hand with a practice of inflating the property accounts, which were written up so as to balance whatever amounts of securities the controlling interests might deem fit to issue.

In spite of its notorious inaccuracy, this nominal capitalization, to which the book values were made to correspond, has been the only record of actual costs possessed by the commissions and courts. Indeed, not only has capitalization been the only record of actual cost, but also, in the case of most railways, it has been the only test *of any sort* on which "fair value" might be based; for physical valuations have not yet been completed.

Faced with the necessity of deciding whether railroads should be allowed to raise their rates, and lacking any other information as to the fair value of the property, the Interstate Commerce Commission, in all its general rate cases, has been obliged to take account of capitalization as an evidence of the property value. To be sure, it has placed little confidence in the figures so obtained, and has therefore attempted to discount them as far as possible. But in the absence of other data, it has been compelled to base its decisions largely on these faulty statements.¹ Recognition of the unsatisfac-

¹ The above statement was written before the recent rate decision, dated July 29, 1920, granting to all carriers a heavy increase in freight and passenger rates. This new decision goes farther than any previous case in accepting capitalization or book value as the controlling factor in the determination of fair value. As compared to a book value of \$20,040,572,611, the "fair value" was found by the commission to be \$18,900,000,000. A review of earlier decisions by the Interstate Commission with reference to capitalization as an element in "fair value" will be found in Appendix A, *infra*.

tory character of such evidence is what led the commission to urge upon Congress the necessity of a physical valuation. When this valuation has been completed, the commission may be expected to disregard entirely the outstanding securities in its estimate of the property value.

Whether the physical valuation, when completed, will show that the railways have been making excessive profits in the past is of course a matter for conjecture. Railway men, however, confidently assert that total net capitalization of American railways will be found to be under rather than over the total "physical value" as based on replacement cost. It must be admitted that preliminary reports on the valuation of several of the railways tend to bear out this contention.¹ But this of course raises the whole question whether public utilities should be valued for rate-making purposes on the basis of their present high replacement cost, or on the basis of their much lower original cost. In the latter case, the outstanding capitalization is almost certainly excessive. The present treatise will not discuss this perplexing question of rate making.

Although no one can deny that in the past, overcapitalization has been used deliberately as a means of deceiving the government and the public as to the actual cost of the property, one need not conclude that it may always be so used. It is entirely conceivable that the railways might be permitted to water their stock without limit, while being compelled to state correctly on their balance sheets the actual property investments. In that case, an excessive stock issue would be offset on the balance sheet by a corresponding entry to "Stock Discount." Under such a procedure, the property account would state correctly the actual

¹ For detailed statistics on this point, see the testimony of Thomas W. Hulme before the Interstate Commerce Commission, Washington, May 26th and 27th, 1920, separately printed by the Secretary, Presidents' Conference Committee, Philadelphia, June 4, 1920.

cost, with the result that courts and commissions would not be deceived if they desired to base rates on the actual investment. Precisely that practice has prevailed in England. British railways have been permitted to issue large amounts of watered stock, but in their reports to the Board of Trade they have been obliged to state frankly the amount of water. Not so, however, with American railways. They have balanced their excessive stock issues, not by charges to Stock Discount, but rather by an overvaluation of their property. It is this deliberate deception that has made stock watering as practised in America so much more vicious than stock watering in England.¹

Capitalization as a separate factor in "fair value." For anyone who is not versed in the legal profundities of railway counsel, it may be difficult to see how nominal capitalization can be claimed as an element in fair value except in so far as it may indicate the actual investment. Yet railway spokesmen have repeatedly argued that the amount of outstanding securities should be given weight in determining fair value, entirely irrespective of the actual cost. The basis of this plea is the "innocent investor" argument. Even if securities are fictitious, they have been bought in good faith by investors who supposed that they represented real property. These investors, it is held, should not be "penalized" for the sins of bygone financiers.

During the recent general rate cases,—the "Five Per Cent," and the "Fifteen Per Cent" cases,—the financial and railway interests set going a wave of propaganda urging this claim for the protection of existing securities. The nature of their argument is indicated in an address before the Investment Bankers Association of America by its president, Mr. A. B. Leach. Mr. Leach's remarks are reported as follows:

¹ But even the British practice has not escaped criticism; see pp. 60-61, *infra*.

A very strong and able committee of our members attended a session of the Interstate Commerce Commission when the earlier railroad rate question was under consideration. They presented, with all due emphasis, that the investors' position in relation to the rate question is that the railroads should be granted the increase asked for, whatever may have been the error or failures or mistakes of mind or purpose in issuing some of these securities, the fact remains that the railroads have become very important, if not the most important industry in the country, and the investments in railroad securities form a very large percentage of the security for the savings of our people, in more than one way.¹

One would not be justified, however, in assuming that commissions actually take account of outstanding securities simply because investors plead for such consideration. Railway interests, in rate cases, have continually entered pleas which commissions have continually denied. We must turn, therefore, to the decisions of courts and commissions to see whether these pleas have won recognition.

On this point the theory of the law is sufficiently clear. The United States Supreme Court has held that public utilities are entitled to a return on the "fair value" of the *property*, not on the securities issued against that property.² To be sure, the above-quoted dictum in *Smyth v. Ames* states that in the determination of the fair value of a company's property, "the amount and market value of its bonds and stocks" are among the elements to be considered. But

¹ *Proceedings of the Association of Investment Bankers of America, Denver, September, 1915*, pp. 15-16.

² This statement applies to securities that have not been issued under the specific authorization of a public service commission. Whether or not securities, when officially approved by a commission, will create a legal claim in rate decisions has not as yet been settled in court. The public utility laws contain a disclaimer of any obligation or guaranty on the part of the state with respect to authorized securities; but some authorities are doubtful as to the complete efficacy of this disclaimer.

later decisions have been unanimous in holding that this statement did not imply the right to earn profits on fictitious securities. Indeed, quite the contrary view was expressed in the Smyth case itself, as well as in subsequent decisions. So generally recognized is this point of view today, that we need spend no time here in following the court decisions. However, further citations are given in Appendix A of this study.

Public service commissions, no less than courts, have been almost unanimous in asserting that capitalization is not of itself an element in "fair value." Some years ago, to be sure, the Interstate Commerce Commission, in the Spokane Rate Case,¹ appeared to be taking a contrary position, acknowledging the claim of outstanding securities, even when watered. But this position seems later to have been entirely reversed.²

Few authorities today would question the statement that *in the theory of the law*, at least, a capitalization in excess of actual assets should have no consideration in fixing the "fair value" of the property. But it is often maintained by persons familiar with the procedure of rate cases that, despite all theory, courts and commissions do give weight to the claim for a return on excessive security issues. The "innocent investor" plea is thought to have some influence.

It is extremely difficult, if not impossible, definitely to prove or to disprove this opinion by reference to the published reports of rate cases. For in fixing a valuation, commissions do not state what, if any, allowance has been made for watered securities. If such allowance is made, it does not so appear in the report, but is probably covered up by an excessive estimate of the value of intangibles, such as "over-

¹ 15 I. C. C. Rep. 376, 410 (1909).

² See Appendix A for a discussion of the position of the Interstate Commerce Commission and of various state commissions.

head charges," or "going value." Only those who have taken part in the proceedings can really know whether or not capitalization has influenced the decision.

It is therefore very significant to find testimony from behind the scenes to the effect that outstanding securities are in fact taken into account. Members of the Interstate Commerce Commission and of various state commissions have expressed this view. In an address before the National Association of Railway Commissioners, Interstate Commerce Commissioner Clements remarked:

It is often said that capitalization has nothing to do with the question of reasonable rates. Perhaps legally and technically speaking that is true, but as a matter of fact it is never left out of view.¹

On another occasion, Mr. Clark, Chairman of the Interstate Commerce Commission, expressed a similar view.²

At the conference of the National Association of Railway Commissioners for 1913, there was presented a symposium of opinions from various commissioners on questions of security regulation.³ Of the six commissioners who expressed an opinion on the influence of capitalization in valuation cases, five believed that such influence existed, and only one, Mr. Roemer of the Wisconsin Commission, seemed to take the opposite view.

Such testimony from men who have themselves taken part in regulating rates can hardly be gainsaid. One is forced to conclude that excessive capitalization, all legal theory to the contrary, has caused courts and commissions

¹ *Proceedings*, 24th Convention, 1912, p. 219.

² U. S. Congress, House of Rep., Committee on Interstate and Foreign Commerce, *Hearings*, February 9 to March 17, 1914, *op. cit.*, pp. 57-87.

³ *Proceedings*, 25th Convention, 1913, pp. 115-223, 238-257.

to be more liberal in their valuations than they would otherwise have been.

But without denying this past influence of capitalization on "fair value," one may seriously question whether any such connection need prevail in the future. The very idea of counting nominal liabilities as part of the amount of property on which a return should be earned is so illogical and so absurd that it would hardly have had any currency except under peculiar circumstances. These circumstances have been the chaotic condition of the theory and practice of rate regulation. In the first place, no clear-cut basis of valuation has ever been adopted by commissions or accepted by the courts. In the second place, no adequate records of original or replacement cost have been at hand. The natural result of this unsettled state of things has been to put the courts and commissions in a compromising frame of mind. Almost any plea that counsel for the companies might present would, in some vague way, be taken into account; to use the judicial phraseology, it would "be given such weight as may be just and right in each case." But this chaotic condition will not last. As soon as the government adopts a definite standard of valuation, and as soon as it secures the necessary records of cost, it will have removed the uncertainties that have caused rate regulators to take account of security issues in estimating "fair value."

Conclusions on capitalization and "fair value." The following conclusions may now be set forth as to the relation between capitalization and "fair value" for rate making. The amount of outstanding securities has been a factor in valuation proceedings, first, as evidence of the actual investment, and second, as an item entitled to some weight on its own account. The latter consideration, however, is not explicitly stated in the decisions of courts and commissions, and one is left to infer its influence from the

unofficial remarks of commissioners. But, although capitalization has been, on both of the above grounds, an element in valuation, there is no good reason to suppose that it need continue to remain an important factor in the future. For after a physical valuation has been completed, and after a definite basis of rate-making value has been set, courts and commissions will have no reason or excuse for accepting the par value of securities as an indication of the "fair value."

If one were to assume that the evil of stock watering lay simply and solely in a resulting overvaluation of railway property for rate-making purposes, one might fairly question whether the most expedient way to cure the evil would not be to prevent the overvaluation without troubling to prevent the stock watering.¹ Government regulation of security issues is a costly experiment, and in some respects a dangerous experiment. Would it not be wiser, then, to leave the private railway managements free to determine the amount of securities, and simply to require that any excessive issues must not be permitted to inflate the property accounts? In short, could not stock watering be made innocuous by full publicity of the actual investment?

Several eminent authorities have answered this question in the affirmative. The Railroad Securities Commission took such a position when it reported in favor of publicity rather than of regulation of railway finance. Similar views

¹ Some years ago, a bill to secure this object was introduced into Congress by Representative Adamson. Mr. Adamson was at that time opposed to the plan for federal regulation of railway securities. As a substitute for such a measure, he introduced a bill providing that if any railroad should plead inadequacy of return on its securities as a reason for being permitted to raise its rates, it must present evidence that those securities represent actual investment (*Cong. Debates*, 61st Cong., 2nd Sess., 1910, vol. cv, pp. 5592-4). A somewhat similar proposal was made by Mr. S. Z. Mitchell, President of the Electric Bond and Share Company, at a hearing of the Senate Committee on Interstate Commerce, December 14, 1915.

have been expressed by Mr. Balthasar H. Meyer¹ of the Interstate Commerce Commission, and by Mr. Franklin K. Lane.²

The position taken by these authorities would be strong indeed were it not for the fact that the evil of overcapitalization is not confined to its possible influence on the valuation of the property. Even though that influence were completely removed, other evils would remain. What these evils are we shall note in the remaining sections of this chapter.

2. Capitalization and the Rate of Return

When a commission has found the "fair value" of a railroad property, it must next determine the rate of return which the company is entitled to earn on that value. The courts have held that this return must be "reasonable;" but their decisions as to what constitutes reasonableness have been even more indefinite than have been their decisions on "fair value."³ The tendency of the courts, however, has been to leave the commissions much more discretion in the former matter than in the latter.⁴ Beyond insisting on a certain minimum,—say 5 or 6 per cent,—the courts have not been disposed to hold that any rate fixed by a commission is confiscatory. Our study of the effect of capitalization on the rate of return must therefore emphasize the practice of commissions rather than the rulings of courts.

¹ U. S. House of Representatives, Committee on Interstate and Foreign Commerce, *Hearings, February 9 to March 17, 1914, on "Regulation of the Issuance of Stocks and Bonds,"* pp. 87-114.

² "Railroad Capitalization and Federal Regulation," *American Review of Reviews*, vol. xxxvii (1908), pp. 711-14.

³ On the rate of return, see Robert H. Whitten, *Valuation of Public Service Corporations*, 2 vols. (New York, 1912-14), vol. i, ch. xxx, vol. ii, ch. xxx; Beale and Wyman, *Railroad Rate Regulation*, 2nd ed., by Bruce Wyman (New York, 1915), ch. vii.

⁴ Whitten, vol. i, p. 690.

In fixing the rate of return, public service commissions must take account of two different considerations: The one is the question of fairness to the investors; the other is that of public expediency. Is the given return a fair compensation for the use of the present investment? If so, is it sufficient to attract new capital into the business? Both of these questions must be answered before deciding what rates a public utility should be allowed to charge.¹ To be sure, the distinction between what is "fair" and what is "expedient" is not always made; often, perhaps usually, these two factors would be considered identical. But at times there is a distinction of much importance. Let us discuss first the question of the *fair* rate and later the question of the *expedient* rate.

The Fair Rate. While decisions as to what constitutes a fair rate do not all agree, the generally accepted principle is this: that the rate should be such as would induce the investment of capital in similar enterprises, similarly situated. If, for example, five per cent will attract capital into eastern railways, then five per cent would be a "fair return" for that class of enterprise. If, on the other hand, eight or ten per cent would be required for western roads, then that higher rate would be "fair" for such an investment.

How, then, may this rate of return be affected by nominal capitalization? Only in a very indirect way; namely, through the possible effect of capitalization on the credit of the railways. The fact that many railways have been overcapitalized, and otherwise financially mismanaged, may bring railway investments into disrepute, and may therefore raise the rate of return that is necessary to attract

¹That is to say, the *commissions* must pay regard to both of these questions; on the other hand, the *courts* usually take account merely of the first point.

capital into that class of enterprise. An artificial element of risk is created—the risk that railway companies may be found to be financially topheavy; and investors may fairly demand that the public should pay them a higher rate of return for assuming that risk.

That this relation between capitalization and the rate of return may not be merely theoretical will be recognized by impartial students of American railway finance. Fiascos like Rock Island, Alton, and Frisco, caused largely by reckless overcapitalization, have helped to bring all railway investments into disrepute, and have therefore tended to raise the rate of interest that must be offered to attract capital. The fact that, up to the present time, railways have perhaps not secured this necessary rate, and that therefore capital *has not been* attracted, is a temporary situation which does not disprove the ultimate relation between capitalization and the rate of return.

But of much more significance than the relation of capitalization to the *fair* rate is its relation to the *expedient* rate—the rate that may exceed what is considered “fair.” To this question we now turn.

The expedient rate. In the previous paragraphs we noted that commissions have generally held that a “fair rate” of return on public service property is that rate which will attract capital into enterprises of a similar nature. Ordinarily, this would also be the “expedient” rate; that is, it would be the minimum rate needed in order to maintain the good credit of the company and its power to give adequate service. But sometimes the “fair rate” would not be sufficient for this purpose. Let us suppose that the company in question is seriously overcapitalized; that its earnings under present rates are barely sufficient to enable it to pay its interest charges and thus to escape bankruptcy. A company in this condition will be able to borrow

money, if at all, only by paying exorbitant rates of interest. It would be quite unable to secure this money if it were allowed to earn merely the "fair rate," *i. e.*, the rate current in other railways similarly located but more conservatively capitalized.

As an illustration of this fact, let us take the New Haven.¹ In the year 1915, this road, despite its run-down physical condition, reported earnings equal to 6.2 per cent of the book value of its railway property.² Yet, while such a return might well have been considered a "fair rate," it was quite too small to support the company's credit in view of its heavy liabilities; nor did it suffice to prevent President Elliott from complaining bitterly that the public service commissions were not sufficiently liberal in their rate decisions.

Commissions have frequently been obliged to face such situations in fixing rates that apply to weak railways and public utilities. They are confronted with this dilemma: that they must either sanction exorbitant rates or else accept the consequence of poor service. Which horn of the dilemma have they chosen? That is a difficult question to answer. The difficulty lies in the fact that commissions, in their rate decisions, have seldom made a clear-cut distinction between what is fair and what is expedient. They have never decided, for example, that a particular company should be allowed only five per cent as a "fair" rate of return, but that seven per cent should be allowed in order to maintain the corporate credit. On the contrary, they have fixed a so-called "reasonable" rate, without stating the extent to which necessity rather than fairness has been the

¹ To be sure, the New Haven was not overcapitalized in the narrow sense of that term. But it was nevertheless financially overweighted because of the burden of its unprofitable outside enterprises.

² 4 Ann. Rep. Mass. P. S. C. 324 (1916). See also 21 I. C. C. Rep. 62 (1914).

test of the reasonableness. This is perfectly natural in view of the uncertain and indefinite standards that have prevailed as to what is fair. It is doubtful whether the commissions know themselves just to what extent justice and to what extent public policy is their guide in fixing the rate.

But for all this uncertainty, a study of recent rate cases leaves no doubt that excessive returns have sometimes been permitted in order to bolster up the credit of overcapitalized or mismanaged companies. In this respect, commissions seem to have differed in their attitudes. The Interstate Commerce Commission and the Massachusetts Public Service Commission have taken the position, in theory at least, that they are not empowered by law to permit excessive rates for the sake of upholding railway credit. On the other hand, several state commissions have interpreted their powers more liberally. They have held that the paramount consideration is adequate service, and that as between poor service and excessive rates, the latter is the lesser of the two evils.

In Appendix B of this study the reader will find a review of the position of various public service commissions on this point. On the whole, one notes a recent tendency to pay more and more attention to the question of expediency and less to the abstract question of fairness. The tendency has been especially prominent during the war and has continued since the armistice as a result of the alarming decline in the credit of railroads and street railways.¹

¹ The distinction between what is fair and what is expedient is clearly brought out in the present efforts of street railway companies to secure permission to charge a higher fare than is stipulated in their franchises. Since the old charge had been fixed by voluntary agreement between the two parties to the franchise, it must be regarded, according to current business principles, as the "fair" charge. To be sure, it has not proved sufficient, in these times of high operating costs, to earn a "fair return on the fair value of the property." But

C. CONCLUSIONS ON THE EFFECT OF CAPITALIZATION
ON RATES

The various ways in which capitalization may affect railway rates have been discussed. These may now be summarized in outline form.

Overcapitalization may affect rates:

I. When rates are fixed by the railway management,

- (1) Under monopoly conditions, by causing the management to adopt the short-sighted policy of charging high rates in order to secure maximum returns in the immediate future, instead of charging lower rates in the expectation of building up traffic in the long run.
- (2) Under competitive conditions, by causing the management to adopt the equally short-sighted policy of cutting rates unduly so as to secure a temporary advantage over competitors.

II. When rates are fixed by government authority,

- (1) By raising the valuation on which the rates are based,
 - a. through the use of capitalization as evidence of the original investment,

in these cases, "fair return" is not the test of the "fair" charge. Doubtless, each party to the contract considered the prospective return before agreeing to the five-cent fare. But once the contract is signed, the company is entitled to whatever earnings it can make out of the given charge, no more, no less. If profits had been excessive, as they might have been in a period of falling operating expenses, the cities would have had no right to demand a reduction in the fare. Similarly, the fact that profits have proved to be inadequate gives the companies no claim for relief from their burdensome contract. As a matter of strict justice they should take their losses, just as a stock trader takes his loss when he has made an unfavorable contract to buy or to sell. But the question cannot be settled on the basis of strict justice; for the public, no less than the railway companies, may suffer from an enforcement of the contract. Expediency may dictate leniency toward the railway companies just as it may sometimes require leniency on the part of a creditor toward his bankrupt debtor.

- b. through the tendency of courts and commissions to accept the amount of securities as constituting, *per se*, an element in the "fair value,"
- (2) By raising the rate of return which companies must be permitted to earn, because of the tendency of overcapitalization to weaken the corporate credit, and thus by affecting
 - a. the "fair rate," *i. e.*, the rate necessary to attract capital into similar enterprises,
 - b. the "expedient rate," *i. e.*, the rate necessary to attract capital into the particular enterprise in question.

Since rates are now subject to strict regulation by the government, the relations listed in the second division of the above outline are the only ones of present importance. Under government control of rates, capitalization may affect transportation charges in two ways: first, by influencing the "fair value" of the property as fixed by a court or a commission; second, by influencing the rate of return that a company may be permitted to earn. But the relation of capitalization to "fair value," while it has doubtless been present in the past, need not continue in the future provided that the railways are required to keep accurate records of actual investment. As an argument for security regulation, therefore, the presence of such a connection in the past cannot be considered of much weight. With respect to the rate of return, however, the influence of capitalization cannot be so easily overcome. The fact cannot be denied that a financially weak railway—whether that weakness is due to overcapitalization or to any other cause—cannot secure the funds for developing its business without paying an exorbitant rate of interest. The public, then, must either pay that interest in higher rates or must suffer the poor service that will result from a failure to secure the capital.

It is true that there may sometimes be a third alternative. Instead of permitting a financially weak railway to charge excessive rates, a commission might keep down the rates to the minimum and thus force the railway into a receivership and a reorganization. That heroic method may be the very best solution, but it cannot be considered an adequate one, for two reasons: first, because bankruptcy brings discredit, not merely on the particular company, but also on all railway enterprises; second, because a weak company may not be quite weak enough to be forced into receivership. For years the company may lead a hand-to-mouth existence on the low rates, and a commission may be powerless either to make it give good service or to compel a reorganization.

II. EFFECT OF CAPITALIZATION ON SERVICE

Overcapitalization, we have just seen, must lead to one of two things, if not to both: excessive rates, or inferior service. Most of the popular discussions have emphasized the first result. Yet, of the two, the latter is much the more serious. A financially weak railway is far more likely to reduce its standards of service and to neglect necessary improvements than it is to raise its rates. The former policy is the easy one; the latter presents many difficulties. But in spite of its greater practical importance, the relation of capitalization to service may be discussed much more briefly than the relation of capitalization to rates, since it is simpler and subject to less controversy.

There are two chief reasons why poor service rather than high rates has been the more frequent outcome of overcapitalization. In the first place, competition has prevented a financially weak road from charging higher rates than its competitors. This accounts for the fact, already noted, that highly capitalized railways like the Rock Island, the Alton, and the Chicago Great Western, have charged rela-

tively low rates. In the second place, commissions have been reluctant to allow weak companies to bolster their credit by charging excessive rates. Perhaps, as we have already suggested, this reluctance may become somewhat less strong in the future; yet it will doubtless always be present to some degree.

The history of practically all recent railroad failures illustrates the effect of financial weakness on the quality of the service. Unable to secure funds, these roads struggled along for years without making necessary additions and improvements, meanwhile permitting their existing facilities to deteriorate by deferring maintenance charges. When finally the companies did fail and go into receiverships, the receivers had [or were obliged] to devote all available resources to getting the road and equipment back into fair operating condition.

Recent reorganizations have required large sums for rehabilitation despite the difficulty of securing the necessary subscriptions or payments on assessment. According to Daggett, the Frisco secured for this purpose nearly eleven million dollars; the Chicago and Great Western set aside \$9,892,274 to cover cost of rehabilitation, additional terminals, equipment, and shops; the Missouri Pacific provided \$12,713,792 for additional working capital, new equipment and immediate improvements, as well as for adjustment expenses and the payment of loans.¹

Everyone is familiar with the unsatisfactory service of the New England roads since their financial difficulties.² Commenting on this condition, the Massachusetts Public Service Commission said:

¹ "Recent Railroad Failures and Reorganizations," *Quarterly Journal of Economics*, vol. xxxii (1918), pp. 446-86, 465.

² For a discussion of the inferior service on the New Haven and the Boston and Maine, see 27 I. C. C. Rep. 560 (1913); 3 Ann. Rep. Mass. P. S. C. xii (1915); 4 Mass. P. S. C. Rep. 319-330 (1916).

Along with the increase in rates, passenger service has been substantially curtailed, more particularly upon the New York, New Haven and Hartford and Boston and Maine Railroads, a curtailment made necessary by the financial difficulties of the companies. In view of the fact that these difficulties were in no small measure due, not to causes beyond control, but to past mismanagement, the forbearance and patience of the traveling and shipping public in the face of higher rates and lessened service has been noteworthy.¹

The ill effects of gross overcapitalization are familiar to all patrons of the New York street railway system.² When the Public Service Commission was considering the reorganization plans of the Third Avenue Railway, in 1910, that company was still using horse cars on some of its lines. "For five years preceding the receivership," says Professor Ripley, "not a new car was bought; and it was beyond the power of the company to buy."³ That financial abuses were responsible for this run-down condition was admitted by Receiver Whitridge, in spite of his insistence that the public should not concern itself with the regulation of future security issues. The Public Service Commission quotes him as saying that "the endeavor to pay interest on what was fairly called watered stock, or stock out of which the value had run, resulted in deterioration of service, inadequacy of service. . . ." ⁴ He qualified this remark, however, by expressing the belief that this inferior service need not have occurred, even with overcapitalization, if the Public Service Commission had been in existence; but unfortunately this opinion has not been borne out by later experience.

¹ 3 Ann. Rep. Mass. P. S. C. xiii (1915).

² Ripley, *Railroads, Finance and Organization*, describes this situation and cites further references (pp. 283, 286-7). See also the decisions of the New York Public Service Commission, 1st District, on the "First and Second Reorganization Plans of the Third Avenue Railroad" (2 P. S. C. R. [1st Dist. N. Y.] 94, 347).

³ Ripley, p. 283.

⁴ 2 P. S. C. R. (1st Dist. N. Y.) 94, 117 (1909).

In 1914 the *Railway Age Gazette*, referring to four railroads in financial difficulties—the Wabash, the Frisco, the Rock Island, and the Missouri Pacific—remarked:

No one of the four properties is in bad shape physically; on the other hand, no one of the four properties has been kept abreast of the modern sciences of railroading, not through any mistaken ideas on the part of the operating management, but simply because of lack of money and of what have been considered the exigencies of the case.¹

This statement may also be applied to the entire former Gould system. It would be especially pertinent with respect to the Missouri, Kansas and Texas Railway. On the condition of this road Mr. J. W. Kendrick, who investigated the property for Speyer & Co., bankers, reported as follows:

[The railway was] handicapped by extraordinary interest charges upon an accumulated nondescript indebtedness, so large as to make it necessary to starve the property with respect to maintenance in order to keep it solvent, especially in view of the fact that the payment of dividends was commenced in 1906 and continued until 1914, during which time \$4,160,000 was dispensed to stockholders that should have been returned to the property in the form of well-conceived improvements. . . .²

Of course, it would not be correct to assume that in all these cases the financial weakness that was responsible for the inadequate service was caused wholly by overcapitalization or by other forms of financial abuse. The causes of railroad failure have been diverse; excessive competition has been an important factor,³ and in not a few cases, unjust

¹ *Railway Age Gazette*, vol. lvi (1914), p. 1174.

² *Ibid.*, vol. lxii (1917), p. 365.

³ Referring to failures since 1907, Daggett says: "Generally speaking, the failures were in the intensely competitive territory of the Central Freight Association, and in the less densely settled sections west and southwest of the Mississippi River" (*Quarterly Journal of Economics*, vol. xxxii [1918], p. 448.)

rate regulation must share the blame. But it is none the less true that in all of the instances mentioned above, and in most of the other recent cases of receivership, overcapitalization has been an important factor in the trouble.¹

Up to the present point, we have been referring simply to the inadequate service on those railways that have been conspicuous examples either of dishonest or of unwise financial practice. These cases in themselves make up a large aggregate. Of 34,559 miles of line in receivers' hands in December 1916, over forty per cent were reported by the Interstate Commerce Commission to have "suffered principally from financial mismanagement and exploitation."² A still greater proportion have been subject to imprudent, even when not dishonest, financing. But even more serious, perhaps, is the weakened credit of American railways as a whole. The general lack of adequate facilities, particularly of equipment and terminals, is notorious. Indeed, no persons have recognized this shortcoming nor deplored the loss of credit which it has occasioned, more than the railway representatives themselves. Only the cause of this financial misfortune is the subject of dispute. Railway men have minimized the factor of improper financial methods and have ascribed most of their difficulties to unfair regulation. In support of this argument they point out that only a small minority of the railways of the country have been guilty of dishonest practices. Public service commissions, on the other hand, deny their responsibility for the trouble and place the blame on overcapitalization, undue expansion, and financial abuses. In reply to the argument that only a

¹For a discussion of the causes of recent railroad failures, see Daggett, *op. cit.*, also, Fankhauser, "Receivership and Reorganization of Steam Railroads," printed as an appendix to the "Newlands Committee" *Hearings* (vol. ii, pp. 1937-2138). For failures prior to 1907, see Daggett, *Railroad Reorganizations* (Boston, 1908).

²44 I. C. C. Rep. 223.

small number of the railways have committed financial sins, they assert that these cases bring disrepute and suspicion upon all companies, good and bad, and so injure the credit of American railway investments as a whole.¹

It is quite unnecessary for our present purpose to decide upon the exact weight of these opposing views. Sufficiently clear in any case is the fact that improper capitalization has been *one* of the serious causes, even though by no means the only cause, of the recent financial difficulties. In fact, the need for a more liberal governmental policy toward the railways can hardly be treated apart from the need for a wiser policy of railway finance. The public cannot be expected to sanction liberal rate increases unless it receives better assurance than it has received in the past that the increased earnings will be used more honestly and more prudently in the effort to maintain the credit of the companies. This point seems now to be recognized by the spokesmen for the railways, to judge from their recent acceptance of federal control of security issues as a necessary part of railway regulation.

III. CONCLUSIONS OF CHAPTER ²

The discussion in this chapter, it is hoped, will serve to show how unwarranted is the assertion, until recently made by most railway officials, that the capitalization of railway companies is not a public concern. And yet, it is equally clear that the influence of the amount of outstanding

¹ These two sides of the case were argued at length at the hearings of the "Newlands Committee" by Mr. Thom, Counsel for the Railway Executives' Advisory Committee, and by Mr. Thelen, President of the National Association of Railway Commissioners. See also U. S. House of Rep., Committee on Interstate and Foreign Commerce, *Hearings on "Federal Operation of Transportation Systems,"* 65th Cong., 2d Sess., January 8-29, 1918.

² A more detailed summary of the conclusions as to the influence of capitalization on rates has been given already, pp. 36-38, *supra*.

securities is by no means as direct as is frequently assumed by railway critics. The medium of this influence is credit. Credit forms the connecting link between capitalization on the one hand, and rates and service on the other. It is the failure to appreciate the indirect nature of this connection that has been responsible for the conflicting views on the subject. That improper capitalization is injurious to corporate credit would be denied by no one; on the other hand, that poor credit is prejudicial to the interests of the public is recognized by all. The conclusion that capitalization must therefore be a matter of public concern would seem to follow as a matter of course. Yet for years it has been vigorously denied by railway spokesmen. In almost the same breath they have asserted the need for higher rates in order to support railway credit, while denying the need for sound capitalization to further the same object.

But while the foregoing conclusions justify the public suspicion of stock watering, they also indicate that a shift of emphasis is required in explaining the evil and in providing a cure. The assumption has been that there is a direct and close relation between capitalization and rates—the higher the former, the higher the latter. Now this assumption would be true if the amount of securities were accepted as a test of “fair value.” But this test has been only partly accepted in the past, and in the future the government need not accept it at all, if it does not wish to do so. In the future, then, the only serious danger from overcapitalization will be, not that it will be an element in determining fair value, but rather that it will injure credit. But that raises a new question. What is the exact relation between capitalization and corporate credit? Is it simply that low capitalization tends to create sound credit, and high capitalization to create weak credit? Or is the relation more complex? To this question is devoted the following chapter, on the *Influence of Capitalization on Railway Credit*.

CHAPTER II

THE INFLUENCE OF CAPITALIZATION ON RAILWAY CREDIT

IN the preceding chapter, the conclusion was reached that overcapitalization results in higher rates or in inferior service to the extent that it injures the corporate credit. It remains to consider in the present chapter the ways in which such injury may occur.

According to a prevalent view, there is an inverse relation between a company's capitalization and its financial soundness—low capitalization tends to cause good credit, high capitalization to cause poor credit. As a very rough generalization, this statement may be allowed to pass; but it is subject to qualifications of such importance that it cannot be accepted as a satisfactory guide to financial practice.

Overcapitalization tends to weaken corporate credit, not directly because of the heavy nominal liabilities, but simply because those liabilities are apt to create excessive interest and dividend charges. But the relation between the capitalization and the amount of capital charges is not close. A company with an absurdly high capitalization may have a lighter burden of interest and dividends than a company capitalized at a low figure. In the former case, the rate of interest and dividends may be lower than in the latter case, so as more than to offset the difference in the amount of securities. Moreover, the highly capitalized company may have issued large amounts of stock but only a small amount of bonds and may therefore be able to make its payments contingent upon the earnings, while the undercapitalized

company may have incurred a heavy debt and may be unable on that account to reduce its fixed charges in times of financial stress.

For these reasons it is necessary to take even more account of the *kind* of capitalization than of its total *amount*. Let us therefore discuss separately the three chief classes of securities: bonds (and other evidences of indebtedness), preferred stock, and common stock. With respect to each, we must consider how the amount of the issue may affect the capital charges and, hence, the credit of the issuing company. The first two classes, however, will be treated very briefly, since the evils of an overissue of bonds or of preferred stock are well recognized; but the last class—common stock—will require careful study, as it involves questions subject to much dispute.

(1) *Bonds and Other Evidences of Indebtedness*

A fundamental distinction has already been noted between bonds and stocks, or rather between debt capital and share capital. It is a distinction recognized in theory by everyone, yet, as the Railroad Securities Commission pointed out, too frequently ignored in its application to security regulation.¹ Bonds represent a promise to pay certain definite amounts of principal and interest. Default on these payments makes a company liable to receivership and foreclosure. Shares of stock, on the other hand, carry no such rigid obligations; their dividends are contingent upon earnings.

Because of this distinction, an excessive debt is generally a menace to credit of much more serious character than is an overissue of stock. Many financiers, indeed, would deny that the amount of common stock is of any material concern, but no one could dispute the evil of overindebtedness.

¹ *Report*, pp. 9-10.

How much more importance is attached by financiers to the amount of corporate debt than to the total capitalization may be seen by a study of railroad reorganizations. In perhaps the majority of cases where railways have been reorganized as a result of a failure, the fixed charges have been scaled down, but the total capitalization has been increased.¹ The reason for this is evident. A reduction in fixed charges was imperative; but the railway creditors could be induced to accept this reduction only by the offer of large amounts of preferred and common stocks. In addition, still more stock had to be issued—and issued freely—in order to induce the old stockholders to pay their assessments and to furnish the funds needed to rehabilitate the property. Doubtless the reorganization managers have often regretted the necessity of adding to an already excessive capitalization by such liberal distributions of stock, but they have been obliged to choose the lesser of two evils.

To some extent, state governments as well as financiers have recognized the peculiar dangers of an overissue of bonds; but they have been much less disposed to accept that fact as an excuse for excessive issues of stock. Indeed, the state policy has been criticized on this very point by able authorities, who have argued that the rigid restrictions which some states have imposed on the issuance of stock has forced railway companies to secure funds almost entirely by borrowing.² In later chapters we shall have occasion

¹ Formerly this was the case with the large majority of railway reorganizations; but the recent tendency has been toward a more conservative recapitalization. Daggett lists fifteen reorganizations that fall within the decade 1907-1917, of which eight resulted in a decrease in total capitalization and seven in an increase ("Recent Railroad Failures and Reorganizations," *Quarterly Journal of Economics*, vol. xxxii [1918], p. 469). The earlier reorganizations are treated by the same authority in his *Railroad Reorganization* (Boston, 1908).

² This view was expressed in the *Report of the Railroad Securities Commission*, pp. 10, 24.

to note the force of this criticism and to consider ways of meeting the difficulty.¹

(2) Preferred Stock

The broad distinction noted above between bonds and stocks must be qualified in order to make room for a security that, in some respects, comes between the two main classes. Preferred stocks, like all other stocks, have a claim to returns only when earned—their dividends may be passed without giving shareholders the right to demand a receivership. But they differ from common stock, and resemble bonds, in that a definite rate of dividends is fixed. The same may be said of income bonds, which are not very different from certain kinds of preferred stocks. Because the rate of dividends is fixed, an excessive issue of preferred stock is a more serious burden than an overissue of common stock: the excess cannot so easily be offset by a corresponding reduction of the dividend rate. Of course it is always possible to pass the preferred dividends or to reduce them below the stipulated rate. But this procedure reacts so unfavorably upon a company's credit that directors do not follow it except under considerable financial stress.

Even more serious, perhaps, than the direct loss of credit resulting from the passing of preferred dividends is the temptation *not to pass them* when they should be passed. Funds that ought to be devoted to maintenance or improvement of the property are diverted to pay capital charges. This point is illustrated by the policy of the Frisco just prior to its failure in 1913. That company continued to pay dividends on its five million dollars of preferred stock up to within two months of the application for a receivership.²

¹ *Infra*, p. 94 *et seq.*

² Dividends were declared for the quarter ending March 31; the receivership was applied for on May 27.

When the preferential rights of the shares are cumulative, an excessive issue is all the more dangerous. If unpaid dividends are allowed to accumulate for several years, the common stock loses practically all value except for purposes of control, and even the preferred shares take on a highly speculative character. Neither cumulative preferred stocks nor cumulative income bonds have been widely used in American railway finance, although the former have been extensively employed by local public utility companies. In several recent railway reorganizations, however, they have been issued in order to avoid heavy fixed charges.¹ One may seriously doubt whether in the long run this conversion of fixed interest into cumulative dividend claims will be a gain. Daggett, an eminent authority on receiverships, thinks that the advantage is very questionable. "Railroads," he says, "are to some extent protected by it against formal bankruptcy, yet such formal bankruptcy is often better than the piling up of a huge load of unpaid dividends before worthless and speculative common stock."²

Enough has been said in this very cursory review of well-recognized principles of railway finance, to indicate that the public has a vital interest in restricting the issues, not only of bonds, but also of preferred stocks.

(3) *Common Stock*

The subject of common stock brings us to the really disputable point in this discussion of the influence of capitalization on credit. With respect to bonds, and even with respect to preferred stock, the wisdom of keeping the issues within safe limits is as generally recognized in theory as it is violated in practice. But with respect to common stock,

¹ Daggett finds nine instances of their use in reorganizations since 1907 (*Quarterly Journal of Economics*, vol. xxxii, p. 483).

² *Ibid.*, p. 483.

the necessity of any moderate limit has frequently been denied. American corporations, as everyone knows, have been lavish in their issues of this class of security. Even companies that have exercised due restraint with their debts and their preferred stocks, have distributed common stock without stint.

The defense of this financial practice is a plausible one. It rests on the argument that a share of stock is really nothing but a participation certificate. Although nominally it purports to represent a certain *amount* of investment, actually it represents merely a *fractional interest* in the total property, of whatever value that total may be. Par values, therefore, are a pure fiction; they are nothing but a mathematical device for convenient division of the capital into shares. This view of the nature of stock leads to the conclusion that the total par values are a matter of very little consequence. Since the common stock is entitled only to such dividends as may be earned, its amount will have no effect on the burden of capital charges against the issuing company. If the stock be doubled, the rate of dividends may be halved, leaving the total requirements unchanged.

The validity of this argument could hardly be questioned if one were to accept an assumption on which it is based; namely, that dividends on common stock are perfectly flexible. This assumption is indeed true in theory; for common stock carries no fixed rate of dividends but is entitled simply to whatever earnings remain after other charges are provided for. In practice, however, the case is not so simple. Dividend requirements tend to become fixed by the expectations of the investors. If a company is expected to pay dividends at the rate of six per cent, that *expected* rate may become a quasi-fixed charge on the corporate revenues. To be sure, the directors of the company are under no legal obligation to meet that expectation; they may reduce

the dividends to four per cent, or they may pass them altogether. But such action can be taken only at the risk of disappointing the stockholders and of creating the feeling that the management has not been as efficient as it should have been. Even if no blame could be attached to the management for failure to earn the dividends, the disappointment would be sure to react unfavorably on the company's credit. Investors could not easily be induced to furnish more capital after former hopes had been disappointed.

For the above reasons, corporate directors are always under pressure to pay the *expected* rate of dividends on common stock. Too often they fail to resist that pressure when the condition of their property demands that all the resources be conserved. The property is starved to meet common stock dividends just as it may be starved to meet the fixed charges. Examples in point are fairly numerous in the history of American railways. The Erie, in its early career, paid unearned dividends on its excessive stock issues and then falsified the accounts so as to conceal the deficits.¹ Charges of similar practice have been made, unofficially, against the Missouri Pacific² and, officially against the Pere Marquette under the Prince management of 1902-4.³ The Chicago & Eastern Illinois was drained of its resources in order to pay common stock dividends to the Frisco, which had bought the stock at two hundred dollars per share.⁴ The New Haven railroad, from 1908 to 1914, paid dividends in excess of its earnings for every year except 1910.⁵

Having in mind this tendency of the *expected* rate of

¹Daggett, *Railroad Reorganization*, p. 37.

²*Moody's Magazine*, vol. xii (1911), p. 319.

³44 I. C. C. Rep. 1 (1917).

⁴29 I. C. C. Rep. 139 (1914).

⁵The New Haven stock, however, was not watered in the ordinary sense of the term.

dividends to become a quasi-fixed charge, we can now see that the amount of outstanding common stock is not wholly a matter of indifference, as so many practical financiers have maintained. An excessive issue of common stock is dangerous for the reason that *it tends to create an expectation of excessive dividends*.¹ Stockholders will anticipate larger dividends from a railway company capitalized at one hundred million dollars than from a precisely similar property capitalized at only fifty millions. They assume, for some reason or other, that a higher nominal capitalization means a higher value and a larger earning capacity.

But why do they make that assumption? To this question there are two possible answers, each of which may be valid according to circumstances. The one that is usually given by writers on corporation finance is that the investing public assumes a correspondence between the par value of a security and the actual cost or value of the property. While the shrewd trader may know quite well that par values are a mere fiction, the innocent "outsider" is thought to be

¹ This statement of the nature of the injury resulting from stock watering may be compared with a recent discussion of the evil by Professor Allyn A. Young, presented in Ely's *Outlines of Economics* (3d rev. ed., New York, 1919, pp. 221-25). Mr. Young writes (p. 223):

"Overcapitalization always makes available, for example, what may be termed a surplus of stock, and this surplus, instead of being distributed equally among the different stockholders, may be used in a disproportionate and extravagant payment to the promoter (or organizer) of the corporation, or the bankers who have assisted in marketing its securities."

With this statement the present writer is entirely in agreement. Indeed, his own interpretation, as given in the text above, is intended to supplement Mr. Young's discussion by explaining how a disproportionate allotment of stock to promoters or to bankers may injure, not merely the bona-fide investors, but also the corporate credit. The injury arises from the fact that the actual investors are not getting as large a share in the enterprise as they think they are getting; hence, they will overestimate their dividend prospects, with the untoward results noted above.

unaware of that fact, or at least only partly aware of it. He assumes, therefore, that a one-hundred-dollar share of stock is worth more than a fifty-dollar share.

That this par-value illusion does, at times, exert some influence, no one familiar with the stock market can seriously doubt. Sufficient proof of this fact is found in the almost universal American practice of overcapitalizing new industrial and railway corporations. Were it not for the possibility of taking advantage of the "magic of par values," corporate promoters would have little or no occasion to indulge in this practice.¹

It would be a mistake, however, to assume that the deceptive appearance of par values furnishes a complete and sufficient explanation of the curious influence that the nominal amount of capitalization exerts over the market values of the securities. Another factor, even more significant, should not be overlooked. That is the tendency of investors to assume that the value of a share of stock remains unchanged

¹ The writer is aware that this statement may be challenged by those who regard stock watering of new enterprises as having other and more legitimate objects than that of deception. It is sometimes said that bonus stock may be employed simply in order to divide the investor's claim into a fixed claim (for interest) and a contingent claim (for dividends). In that way, it is argued, a bondholder may be induced to accept a lower rate of interest on his bonds than he would have been willing to accept were it not for the stock bonus. This point of view is very ably defended by Hastings Lyon (*Corporation Finance*, Boston, 1916, pt. i, pp. 87-107). But it may be questioned very seriously whether the mere desire to divide the claims can account for the use of bonus stock. For that object could be accomplished just as well without the bonus, simply by getting investors to take part of their securities in bonds and part in stock. For example, securities might be offered at par in blocks of four thousand dollars in bonds and one thousand dollars in stock. To be sure, such an offering would probably not sell as readily as would a five thousand dollar bond bearing a lower rate of interest, plus a considerable quantity of bonus stock; but that is precisely because the former offering lacks the *deceptively attractive appearance* of an excessive par value.

even when the total number of shares has been increased. We can best illustrate this point with an example. Suppose that the stock of a certain well-established corporation has been selling at about 150. The company now increases its capitalization by issuing a stock dividend of ten per cent. *Theoretically*, this increase in the number of shares should reduce the value of each share to about 136. *Actually*, however, the market price falls only to, say, 145 and soon may even return to 150. In this case, a particular value has become established in the minds of the investors, so that they fail to discount fully the increased number of shares. But it is the *established* value, rather than the *par* value that is here the influential factor.

Of the two possible sources of deception that we have mentioned,—par value and established value,—one may be active at one time and the other at another time. With new companies, it is the former, rather than the latter, that deludes the investor. But with well-seasoned securities, the situation is reversed. Here the fictitious nature of par values has doubtless already become apparent. Stockholders have already adjusted their valuations on the basis of actual earnings and dividends and have learned to disregard the face values. But let the present capitalization be changed, let the number of shares be increased by the issuance of a stock dividend, and a new danger arises—the danger, namely, that investors will fail properly to discount the increase in the nominal amounts of stock. They will tend to expect the *same rate* of dividends on the *increased number* of shares, with the result that the corporation will be under dangerous pressure to meet this expectation.

The tendency of stocks to maintain their old market values despite an injection of water is a phenomenon well recognized on the stock market. Doubtless this seemingly

illogical tendency is due chiefly to the fact, that, in actual experience, corporations have frequently been able to maintain the old rate of dividends even after issuing watered stock. Indeed, the principal purpose of a stock dividend is to permit companies to pay more liberal cash dividends without increasing the nominal dividend rate and without thereby becoming liable to popular attack for profiteering.¹

It must be admitted that if corporations were to issue stock dividends only when their earnings would safely permit them to maintain the same rate of cash dividends on the higher capitalization, then the practice could hardly be criticized from the point of view of sound finance, however much it might be condemned as an attempt to conceal from the public the true rate of profits. Too often, however, corporations have watered their stock when their earnings have not been sufficient to justify the more liberal dividend policy. In that case, harm has been done, not merely to the private investors who have paid inflated prices for their stock, but also to the credit of the companies, which have suffered under the burden of excessive dividend charges.

Perhaps the two best examples in recent railroad history of the evils of stock watering to which we have alluded are the Alton reorganization in 1899-1900² and the Rock Island

¹ There is also another reason why an increase in nominal capitalization may cause less than a proportionate decrease in the value of each share: Investors, even though they anticipate a corresponding decrease in the rate of dividends, may prefer to have a larger nominal amount of stock paying a low rate than a smaller amount of stock paying a high rate. The low-dividend stock has the illusory appearance of greater safety. This point was brought out by Professor Bemis in his testimony before the United States Industrial Commission (*Report*, vol. ix, p. 88).

² So much dispute has arisen over the facts of the Alton reorganization and over the question as to who was responsible for the company's subsequent misfortunes, that the writer has deemed it necessary to discuss the matter in detail in Appendix C of this study. The subject has much more than a merely historical interest; for it furnishes one of the clearest examples of the evils which governmental regulation of security issues should aim to prevent.

reorganization in 1902.¹ Before its reorganization, each of these roads was in sound financial condition and was able to pay reasonable dividends on a conservative capitalization. Then came the new managements, with policies of expansion and with promises of greatly increased earnings. In order to enhance the market values of the securities and thus to sell out at a handsome profit, these controlling interests proceeded by various devices to inflate the capitalization far out of proportion to the increased investment in the properties. For a short period of time, the increase in the nominal capitalization caused the market value of the stocks and bonds to rise far above the old figures.² But soon it became evident that the heavier burden of interest and dividends was far beyond the ability of the companies to pay. Then the bubbles burst. The Rock Island, in 1915, went into the hands of a receiver, and the Alton, its credit seriously impaired, barely escaped a similar fate owing, it is said, to the financial support of the Union Pacific.

The position emphasized in the foregoing discussion—that the source of danger in stock watering lies in the rigidity of *established* values even more than in the deceptive nature of *par* values—leads to two conclusions of much practical consequence. In the first place, it indicates that the evil to be guarded against is not so much overcapitalization, in the usual meaning of that term, as an *undiscounted increase* in capitalization. Indeed, the danger of inflation is almost as

¹ For the facts of the Rock Island case see the special report on this subject by the Interstate Commerce Commission, 36 I. C. C. Rep. 43 (1915); also, Ripley, *Railroads: Finance and Organization*, p. 524, *et seq.*

² This same thing had happened once before in the history of the Rock Island, in 1880, when the company was reorganized so as to increase the share capitalization by about one hundred per cent. This recapitalization was evidently for the purpose of paying more liberal dividends without exciting public disfavor. See *Commercial and Financial Chronicle*, vol. xxx (1880), p. 663.

great in the case of a company that has been *undercapitalized* and that now raises its capitalization to normal as it is in the case of a company which was originally capitalized at its actual cost and which now issues a stock dividend. In the one case, as in the other, investors are liable to be deceived by a false assumption that the increased amount of securities means increased earnings and larger dividends.

The second practical implication of the theory that we have been discussing is that the more serious evils of stock watering cannot be cured by the mere recourse to the recently favored plan of issuing shares without par value. Removal of the par value, to be sure, removes *one* of the sources of deception; but it leaves untouched the other, more potent, source. For, even without par values, an increase in the *number* of shares, unless accompanied by a corresponding increase in earning power, may result in a dangerous inflation of market values.¹

*Stock watering not the only method of inflating
market value*

Although stock watering is a favorite device by which speculative financiers attempt to inflate market values, it is not the only device. Indeed, unless used in connection with other methods of creating false hopes, it is not apt to be effective. Promoters never rely solely on the tendency of investors to think that more stock means more earnings; they attempt to further that tendency by various kinds of manipulation. Glowing prospectuses and optimistic financial statements are issued; investors are assured that the higher capitalization is justified by the increased earning power that may be expected as a result of the new manage-

¹ But this statement is not meant to condemn shares without par value; it is meant simply to indicate their limitations. The matter is discussed at length in Chapter IV, *infra*.

ment, or as a result of the advantages of consolidation with other companies. The deception may be even more downright; it may take the form of falsified earnings statements, "padded" balance sheets, and false rumors of increased dividends.

American railway history can show many examples of these forms of deception, although, in recent years, the situation has been much improved by the strict accounting regulations of the Interstate Commerce Commission. The Erie, in its early days, seriously overstated its earnings in order to pay unearned dividends.¹ The Louisville and Nashville is reported by the Interstate Commerce Commission to have made improper charges on its balance sheet to properly account in order to offset the liabilities created by a series of stock dividends issued between 1860 and 1891.² More recent cases of misrepresentation have been brought to light by several railway failures occurring within the last few years. Part of the troubles of the Pere Marquette and of the Cincinnati, Hamilton & Dayton was attributed by the Interstate Commerce Commission to an excessive capitalization placed upon the companies in the early part of the present century by a speculative and unscrupulous management. In order to make a market for these securities, interest and dividends were paid out of capital—a fact which was concealed by improper charges to capital account.³ By similar practices the Rock Island management, under the Reid-Moore control, attempted to give an appearance of reality to a grossly inflated capitalization.⁴ The Missouri Pacific, prior to its receivership in 1915, is said to have carried a fictitious surplus for years in order to create the

¹ Daggett, *Railroad Reorganization*, p. 37.

² 33 I. C. C. Rep. 168 (1915).

³ 44 I. C. C. Rep. 1 (1917).

⁴ 36 I. C. C. Rep. 43 (1915).

false impression of financial soundness.¹ Much comment was caused by a report of the Interstate Commerce Commission on the methods of financing the construction of the Chicago, Milwaukee & Puget Sound Railway. This company, in order to circumvent a law of the state of Washington which limited the amount of bonds to twice the amount of the paid-up capital stock, issued stock in excess of one hundred million dollars over the cost of the road and then wrote up the property account in order to conceal the excess.²

The fact that stock watering in America has nearly always been accompanied by other means of misleading the investors, raises the question whether the practice would really be harmful of itself if only the truth as to actual investment and actual earnings were not concealed. Would it not be sufficient for the government to require the publication of an accurate statement of investment and of earnings, so that investors might be in a position fully to discount any fictitious stock issues?³ Several excellent authorities have

¹"For many years this company has, through carrying a fictitious surplus, given the impression to the public that it was in sound financial condition, and the policy of paying dividends on the stock for several years after the time when such dividends should have stopped still further misrepresented the real situation to the public" (*Moody's Magazine*, vol. xii [1911], p. 319).

²29 I. C. C. Rep. 508 (1914).

³An eminent authority on accounting, H. R. Hatfield, goes so far as to say that "the watering of the stock, in itself, aside from accompanying complications is the merest peccadillo. The wrong consists in the 'prevarication,' the positive misstatement, that among the assets is a plant worth \$100,000 when everyone concerned in the transactions knows it is worth only \$50,000, or the untruth that the company has acquired Goodwill worth \$50,000 when it is absolutely innocent of any such possession. If the other accounts in the Balance Sheet are correct little concern need be felt over stock watering. Its evil will be slight, its correction automatic." *Modern Accounting* (New York, 1913), p. 172.

answered this question in the affirmative. They have held that the evil of stock watering is caused, not by the mere presence of the water, but by its *undetected* presence; and they have argued that what is needed is publicity of the facts rather than restriction of the stock issue.

We have already had occasion to discuss this point of view in our study of capitalization as an element in "fair value" for rate making.¹ There it was shown that capitalization need not be considered in fixing a value provided that clear evidence of the actual investment or of the replacement cost is at hand. May not a similar situation apply here? That is, may not investors, like public service commissions, disregard the nominal capitalization as soon as they are furnished with the proper data for looking *behind* that capitalization?

To this question only a doubtful answer can be given. The doubt arises because of the fact that investors are more irrational in their judgments of value than are rate-making commissions. Even though an accurate record of the investment and of the earnings be published, it is doubtful whether that fact will cause investors to disregard entirely the par value and the number of their shares, and to discount any increase in that number. Certainly a full publication of the facts would remove *a large part* of the danger of deception, but it would be hazardous to say that it would remove *all* danger.

On this point the experience of Great Britain is instructive. British railways have been permitted to issue large quantities of watered stock, but they have been obliged to show in their balance sheets exactly how much of their stock represents investment and how much is pure water. While this requirement has doubtless prevented the gross forms of deception that have been practiced by American railways,

¹ *Supra*, pp. 30-31.

it has not been sufficient, in the judgment of some authorities, to remove all misleading appearances.¹ Indeed, the very fact that British railways and other public utilities have issued watered stock in spite of the publicity requirements is in itself an indication that nominal capitalization still has a tendency to deceive; for otherwise there could hardly be any inducement to overcapitalize.²

SUMMARY

In the preceding chapter we saw that the chief evil of overcapitalization lies in its injurious effect on corporate credit. The present chapter has therefore discussed the exact nature of this effect.

Overcapitalization tends to weaken the credit of a railway corporation by creating excessive interest and dividend charges. But the amount of these charges is not in direct proportion to the nominal capitalization. Much depends on the nature of the securities. *Bonds* carry a fixed rate of interest; they therefore impose a burden of charges that cannot be lightened in times of adversity. *Preferred stocks*

¹ See Edward R. McDermott, *Railways* (London, 1904), pp. 163-4; Ching Chun Wang, *Legislative Regulation of Railway Finance in England* (Urbana, Ill., 1918), 2 pts., pt. ii, pp. 144-6; Lord Monkswell, *The Railways of Great Britain* (New York, 1914), p. 280. However, that any serious injury has resulted from railway stock watering is denied by W. R. Lawson, *British Railways* (London, 1913), p. 2. For a criticism of the similar fictitious increases of capital by the municipal utilities, see R. H. Whitten, *Regulation of Public Service Companies in Great Britain* (New York, 1914), ch. ii.

² This statement may be questioned on the ground that companies may choose to increase the number of shares so as to reduce the market value of each share to a figure that is more acceptable for investment and speculative purposes. But that object could be attained by increasing the number of shares while at the same time *reducing the par value to a proportionate extent*, thus leaving the total capitalization just where it was beforehand. The fact that this reduction in par value is not made indicates that the mere convenience of smaller shares is not the only motive behind a fictitious increase in stock.

also carry a fixed rate, but the dividends may be reduced or completely passed if they are not earned. Nevertheless, the necessity of passing the preferred dividends reacts unfavorably on the credit of the company; it should therefore be avoided, if possible, by keeping the amount of preferred stock within safe limits. *Common stock* has no fixed rate of dividends; and this fact has led some financiers to assert that the amount of the issue is a matter of indifference. But we cannot accept this view. It fails to take account of the fact that even on common stock the dividends are not perfectly flexible. Although in theory they are supposed to be determined by actual earnings, in practice they are apt to be held at the *expected* rate. This rate becomes a quasi-fixed charge, and failure to pay it reacts on the corporate credit in the same way as would the passing of a preferred dividend. Even more harmful than the *failure* to pay an expected dividend is its *actual payment* out of capital when it has not been earned. Yet an overcapitalized company is under pressure to do this very thing rather than to admit that it cannot pay its dividends.

But why is it that an excessive issue of stock may cause investors to expect excessive dividends? Why may they not be content with a lower rate of dividend on the higher amount of stock? To these questions there are two possible answers. First, investors may assume that par values represent the actual investment, they will therefore expect the *ordinary* rate of dividends on an *extraordinary* amount of stock. Second, they may assume that a company which issues watered stock will continue to pay the *established* rate of dividends on the *increased* number of shares. Of these two points, the second is the more significant. The danger of stock watering lies therefore not so much in the excess of par value over actual assets as in the increase in the number of shares without a corresponding increase in earning power.

Up to this point, we have discussed the problem of capitalization in its negative aspect: the attempt has been to show the evils that arise from stock watering and other financial abuses. In the remaining chapters we reverse the procedure and consider what principles of capitalization should be followed in order to prevent the recurrence of those evils. The first problem that arises in such a study is the much disputed problem of the basis of capitalization—that is to say, the standard by which to determine the sum total of stocks and bonds which a railway company may properly be allowed to issue. To this question we turn in the following chapter.

CHAPTER III

THE BASIS OF CAPITALIZATION¹

ACCORDING to a view which, until recently, has gone almost unchallenged, the fundamental principle of capitalization is that the face value of outstanding securities should correspond to the cost, or to the fair value, of the property. As one writer puts it, "presumably the chief purpose of regulation of capitalization is to establish an equilibrium between the capitalization and the bona-fide investment."²

¹ For discussions of the basis of capitalization with reference to corporations in general, see Hastings Lyon, *Corporation Finance* (Boston, 1916), pt. i, p. 234, *et seq.*; E. S. Mead, *Corporation Finance* (New York, 1915), ch. xii; Jeremiah Jenks and Walter H. Clark, *The Trust Problem*, rev. ed. (New York, 1917), ch. vii; William H. Lough, *Business Finance* (New York, 1917), ch. viii; William Allen Wood, *Modern Business Corporations*, 2d ed. (Indianapolis, 1917), pp. 32-9; Thomas Conyngton, *Corporate Organization and Management*, 4th ed. (New York, 1918), ch. vii; William Morse Cole, *Accounts: Their Construction and Interpretation* (Boston, 1915), ch. xiii; U. S. Industrial Commission, *Report*, vol. xix (1902), p. 617.

For discussions of the same subject with special reference to railroads and other public utilities, see F. A. Cleveland and F. W. Powell, *Railroad Finance* (New York, 1912), pp. 324-39; Emory R. Johnson and T. W. Van Metre, *Principles of Railroad Transportation* (New York, 1916), pp. 121-24; W. Z. Ripley, *Trusts, Pools and Corporations* (Boston, 1909), ch. vii; U. S. Industrial Commission, *Report*, vol. xix (1902), pp. 408-12. Among the various decisions of public service commissions on security issues, two are especially noteworthy for their discussions of the question of a proper basis of capitalization: *Petition of Interstate Consolidated Street Railway Co.*, 27 Ann. Rep. Mass. R. C. 165 (1895); and *Re Westchester Street Railroad Co.*, 3 P. S. C. R. (2d Dist. N. Y.) 286 (1912).

² Ralph E. Heilman, "The Development by Commissions of the Principles of Public Utility Capitalization," *Journal of Political Economy*, vol. xxiii (1915), p. 888.

Within recent years, however, a new proposal has been made, which is opposed to the orthodox principle of equality between capitalization and assets. Recognizing the difficulties of making par values correspond to actual values, the new plan would abolish par values altogether and thus do away with the possibility of deception which is the chief evil of stock watering. Already the use of stock without par value has been made legal by amendments to the corporation laws of several states and has come into high fashion among industrial corporations. Its possible extension to the interstate railways is certainly worth serious consideration and deserves more attention than it has yet received.

In the following chapter we shall discuss the merits of this new plan as applied to the railways. But before doing so, we must consider the orthodox principle that capitalization should correspond to assets, and we must note the practical difficulties and objections that have led many authorities to favor the abandonment of that principle.

Assuming, then, that there should be an equality between par values and actual assets, the first question to be answered is, On what basis should the assets be valued for the particular purpose at hand? Should the standard be original cost, or reproduction cost, or market value, or some still different measure? This question has given rise to so much controversy that we shall have to discuss it in considerable detail.

At the outset of this inquiry, it is highly important to bear in mind that the problem of a proper basis of capitalization is by no means identical with the more familiar problem of a proper basis of valuation for rate making. To be sure, there is much to be said for the use of the same standard with reference to securities and to rates. But there is also much to be said for *different* standards. To choose but one example of a possible difference: Market value can-

not logically be used as a test of the "fair value" of public service property for rate-making purposes, since the market value itself depends on the rates that may be charged. On the other hand, it can be used with logical consistency as a basis of security issues, since the circular relation no longer applies to the case. Of course, the determination of a basis of capitalization may depend very largely on the determination of a standard of value for rate making. But in a discussion of the former topic, the latter problem should be assumed to be settled instead of being discussed. Emphasis is here laid on the necessity of keeping these two problems distinct, since failure to observe this distinction has led to much confusion in recent discussions of the subject of capitalization.

Most writers on corporation finance have mentioned three possible bases of capitalization: original cost, reproduction cost, and earning capacity. In an elementary study this threefold classification may be acceptable; but for a more thoroughgoing analysis it is quite inadequate. Revision as well as enlargement is necessary. The list that follows is by no means theoretically complete, but it includes at least the more significant standards that have been considered by public service commissions: (1) *rate-making value*; (2) *original investment*; (3) *actual cost (including surplus from reinvested earnings)*; (4) *market value*; (5) *earning capacity*.

The reader will note the omission of *reproduction cost* and the substitution for it of *rate-making value*. The purpose of this change is to indicate that no one would propose to base capitalization on the cost of reproduction unless that cost were also to be used in fixing the value for rate making. In the latter event, one might apply the same standard to security issues, not on its own merits, but simply because it corresponds to the rate-making value. Is it not better, there-

fore, to drop *reproduction cost* from the list of possible bases and to insert in its place *rate-making value*? We may then consider under this heading the advantages of keeping the basis of capitalization identical with the basis of valuation for rate making, however the latter may be determined; while under the other headings we may discuss the reasons for some independent test of capitalization.

Let us now consider in turn the five possible bases mentioned above, first noting the opinions of various public service commissions and then summarizing the arguments for and against each basis.

(1) *Rate-making Value*

At first glance, it would seem fairly obvious that the par value of outstanding securities should correspond to the value of the property for rate-making purposes. Such a conformity would serve to inform investors as to the return which they might be permitted to earn. Yet nearly all public service commissions have seen fit to make a distinction between a fair value for rates and a standard for security issues.

To this general statement, however, some exceptions must be noted. The example of Maryland is a case in point. Several years ago, the Public Service Commission of that state made a report to the legislature, in which it complained that it was not permitted, under the law as it then stood, to authorize the issuance of stock dividends. To this restriction the commission objected on the ground that stock dividends are a necessary means of adjusting capitalization to value for rate making. The report said:

But in a case where the books have been accurately kept, no disadvantage could accrue to the public by permitting the capitalization of earnings expended in plant extensions for a period of, say, five years before the application. So far as

rate making is concerned, it is based, under the rulings of the courts, upon the value of the property, and the more nearly the value of the property and the par value of the outstanding securities agree, the less likelihood there is of misunderstanding upon the part of the public, and the less difficulty the commission will have in administering the law justly and to the best advantage of all concerned.¹

Apparently this report of the commission was heeded by the legislature, for in 1918 the public service law was amended so as to permit corporations under its jurisdiction to issue securities

when necessary or desirable, in the discretion of the commission, to cause the aggregate capitalization to conform to the fair value of the property of such corporations as established by the commission pursuant to the provision of section 30 of this Act.²

"Fair value" in the above statute means value for rate-making purposes. The law does not state how it is to be measured, but the commission has used a composite of factors without accepting any one basis as alone controlling.³

The New York Public Service Commission for the First District, while not accepting consistently any one basis of capitalization, has several times indicated that the same standard should be used for securities as for rate-making value. In the decision on the Second Reorganization Plan of the Third Avenue Railway Company, rejecting the plea that securities should be approved to an amount equal to

¹ 4 Ann. Rep. Md. P. S. C. 21 (1913), P. U. R. 1917 D 857.

² L. 1918, ch. 408, sec. 27.

³ See, for example, the rate case, *Re Chesapeake & Potomac Telephone Co.*, P. U. R. 1916 C 925. In at least one case the commission has already authorized a security issue under the provision of the amendment of 1918 (*Re Chesapeake & Potomac Telephone Co.*, 9 Ann. Rep. Md. P. S. C. 286 [1918], abstracted in P. U. R. 1919 A 1026).

the original investment, Commissioner Maltbie delivered the following opinion:

The mere fact of investment does not establish a perpetual value not only because a mistake in judgment may be made, but also because property may be allowed to deteriorate, because progress in the arts may make it obsolete, and because a change in economic conditions may decrease the use made of it by the public. . . . The commission believes the proposition to be sound that capitalization should have a direct relation to value.¹

By "value" the commissioner appears here to mean replacement cost depreciated. It is clear that the decision is applying to capitalization the same tests that would be applied in finding the "fair value" in a rate case. To be sure, the commission has more recently expressed a preference for actual cost rather than replacement cost as a basis for security issues, whenever that cost can be ascertained.² But this preference does not indicate a distinction between the basis of capitalization and that of rate-making value, since the commission, in its more recent decisions, has been inclined to accept actual cost for the latter purpose as well as for the former.³

The California Railroad Commission, on at least one occasion, has accepted by implication the view that rate-making value, based on replacement cost depreciated, should also be

¹2 P. S. C. R. (1st Dist. N. Y.) 390 (1910).

²*Re Bronx Gas & Elec. Co.*, 6 P. S. C. R. (1st Dist. N. Y.) 243 (1915). In approving the issuance of securities to purchase new property the commission has always used actual cost as the test; see the list of precedents cited in *Manhattan & Queens Traction Corporation*, 5 P. S. C. R. (1st Dist. N. Y.) 71 (1914).

³See, for example, *Re N. Y. & North Shore Traction Co.*, P. U. R. 1918 A 893; also, *Maires v. Flatbush Gas Co.*, *N. Y. State Dept. Repts.*, vol. xv (1918), p. 171.

the standard of capitalization. In an application of the Pacific Gas and Electric Company for permission to issue a stock dividend, the commission denied the petition on the ground that the dividend would create a disparity between the total amount of securities outstanding and the replacement cost depreciated.¹

But the opinions cited above are exceptional. The more general practice is to use different tests for security issues and for rate-making value. The prevailing tendency is to authorize security issues on the basis of original investment or actual cost, while using cost of reproduction at least as one of the important factors in fixing the "fair value" on which to base rates. In the following section we shall discuss the reasons for this policy.

Other distinctions have also been made. In a recent reorganization case, the Missouri Public Service Commission gave two possible reasons for differentiation. The opinion reads as follows:

The determination of fair value for the purpose of limiting the securities to be issued on reorganization of a railroad company is a different question from determining present value in a rate case, in at least one respect, that the "earning power at reasonable rates" is to be taken into consideration in the former. There may also be property not used and useful for railroad purposes which might properly be included in determination of value of property in a reorganization, and excluded in a valuation for rate making.²

The first distinction in the above-quoted opinion, by which earning power is considered in capitalization cases though not in rate cases, has also been maintained by the New York Commission for the Second District and by other

¹ P. U. R. 1916 D 276.

² *Re St. L. & S. F. R. R. Co.*, 3 Mo. P. S. C. 664, 689, P. U. R. 1916 F 77. See also *Re Dunham*, P. U. R. 1916 E 544.

rate-making bodies; to these cases reference will be made in the section on the market-value basis.

The second distinction, according to which certain property may be included in the value for capitalization but not in the value for rates, is due to the fact that railroads engage to a greater or less extent in outside business. Non-railroad property may not be included in valuation for rate making, but if it is recognized as a legitimate undertaking for a railroad, it may be considered in the capitalization allowance.¹

Still another divergence between rate-value and capitalization-value was indicated by the New York Court of Appeals, in a review of a rate decision by the Public Service Commission for the First District.² The case involved the treatment of "going-value" in the Wisconsin sense of the accrued deficit from early operation. The commission, in opposing the allowance of this item in rate-value, argued that such deficits are not properly subjects of capitalization. To this contention the court replied as follows:

It may be, as is urged, that a well-conducted enterprise will charge the cost of developing the business to operating expenses and that it would open the door to an overissue of securities to permit the capitalization of early losses. In answer, it is sufficient to say that we are dealing, not with proper methods of bookkeeping, not with the proper capitalization upon which to issue securities, but solely with the fair return which the company is entitled to receive from the public. Treating a reasonably necessary and proper outlay in building up a business as an investment for the purpose of determining the fair rate of return to be charged is far from hold-

¹ On this point see *D. & H. Co.*, 1 P. S. C. R. (2nd Dist. N. Y.) 392 (1908), decision reversed in *People ex rel., the D. & H. Co. v. Stevens*, 197 N. Y. 1.

² *Kings County Lighting Co. v. Willcox*, 210 N. Y. 479 (1914).

ing that it should be treated as capital against which securities might be issued.¹

Accrued deficits, according to this decision, may properly be added to rate value, but perhaps not properly added to capitalization. The court did not state the grounds on which it made this distinction, but one may surmise that it had in mind the prudence of valuing and capitalizing corporate assets at a minimum.

Summing up these various opinions of courts and commissions, one finds sanction for each of the following distinctions between the basis of capitalization and the basis of rate-making value: (1) the use of original investment or actual cost in the former case and replacement cost in the latter; (2) the acceptance of earning capacity as a factor in the one case but not in the other; (3) the addition of the value of non-public-service property for securities but not for rates; (4) the allowance of accrued deficits from early operation as an item in rate-making value but the rejection of this item in fixing the proper capitalization. Doubtless other distinctions have been made which have not come to the writer's attention.²

What, now, is to be said for the use of the same standard of value in security cases as in rate cases, and why have commissions so generally adopted different bases? The chief reason for accepting the same basis has already been suggested: It is that the par value of securities is ac-

¹ *Ibid.*, pp. 488-9.

² The tendency of nearly all commissions is to be much more liberal in fixing the limit for security issues than in setting a value for rate making. For example, most commissions have on occasion permitted the capitalization of replacements, and some of them have authorized the issuance of securities below par. But action of this sort has been a concession to the necessities of the case, taken by commissions with the full recognition of the fact that it violates the accepted principles of sound capitalization. On this point, see pp. 93-95, *infra*.

cepted by the unwary as an indication of the actual value, and therefore that any excess of capitalization over value for rate making might deceive investors as to the return that they would be permitted to earn. Of course, such a danger would not be present if the amount of securities were less than the valuation for rate making; and precisely that situation might be expected in most cases at the present time, where securities are based on original cost, while rates are based on cost of replacement. But original cost is not in all cases less than replacement cost; and in the future, under a period of falling prices, the tendency may be quite the reverse.

In spite of this cogent reason in favor of the same standard for securities as for rates, the argument against it is even stronger, as long as rates are to be based on cost of replacement. One objection alone would be conclusive against basing securities on the latter standard; namely, the practical difficulty of reducing outstanding capitalization in order to make it correspond to a fall in the value of the property. Once the securities are issued, they cannot be recalled except at great inconvenience to the holders. Moreover, legal difficulties might prevent a scaling-down. On that account, it is essential that the basis for security issues be stable, not subject to fluctuations with changing physical valuations of the property.

But even if the practical objections to the use of replacement cost could be overcome, the wisdom of applying that standard to security issues would be very doubtful. On many accounts it is important that the par value of the securities should represent the actual investment, even though some other test of "fair value" for rate making be accepted. This point is discussed in the following section.

(2) *Original Investment*

According to this basis, every dollar in par value of stocks and bonds must represent a dollar contributed to the enterprise by the investors. No securities may be issued to cover unearned increment, and none may be issued against surplus from reinvested earnings.

On the whole, one may say that those commissions which do not permit the use of stock dividends accept original investment as the proper basis of capitalization; for obviously, if some other standard, such as replacement cost or market value, were adopted, it would be necessary to authorize stock dividends whenever the valuation should exceed the amount of outstanding securities.¹ In Massachusetts, New Hampshire, South Carolina, and the District of Columbia, stock dividends are illegal,² while in other states their use is much restricted by commission rulings.

For many years the policy of Massachusetts has been to limit stock and bond issues of public utilities to the original investment.³ Every application by companies for permission to capitalize their surplus has been denied by the regulating commissions. This drastic restriction of security issues is in large measure the outcome of principles of rate regulation that have been accepted in Massachusetts—at least in the case of gas and electric companies. The Board of

¹This statement is subject to qualification. For instance, in reorganization cases and in consolidation cases the new capitalization may be made to correspond to replacement cost or to any other basis without resort to the use of a stock dividend in the technical sense of the term. The practice of commissions in reorganization cases is noted below, pp. 88-89.

²Mary L. Barron, "State Regulation of the Securities of Railroads and Public Service Companies," *Annals of the American Academy of Political and Social Science*, vol. lxxvi (1918), p. 181.

³This policy, however, is not in every respect consistently followed; exceptions are noted at a later point in this chapter, pp. 89-90.

Gas and Electric Light Commissioners of that state has always denied the right of utilities to earn on their surplus such high rates of profit as are allowed on the capital contributed by the investors. Quite naturally, therefore, it has refused to permit the issuance of securities against surplus; for such permission would appear to concede the right of stockholders to earn the normal rate of return on the entire property.¹

In the matter of security issues, New Hampshire has followed the Massachusetts precedent by forbidding stock dividends.² But unlike Massachusetts, the New Hampshire Public Service Commission has not accepted original investment as the controlling basis in a rate case.³ Here, then, is another illustration of the tendency of commissions

¹Cases illustrating the position of the Massachusetts Board of Gas and Electric Light Commissioners in the matter of surplus are:

(a) With respect to rate making, Springfield Gas Co., 9 Ann. Rep. 6 (1893); East Boston Gas Co., *ibid.*, p. 9; Worcester Gas Lt. Co., 10 Ann. Rep. 31 (1894); Haverhill Gas Co., 16 Ann. Rep. 9 (1900); Haverhill Gas Co., 28 Ann. Rep. 41 (1912). Cf. also an article by Morris Schaff, Chairman of the Mass. Board of Gas and Electric Light Commissioners, on "Capitalization of Earnings of Public Service Companies," *Annals Amer. Acad. Pol. & Soc. Science*, vol. liii (May, 1914), pp. 178-181.

(b) With respect to security issues, Edison Elec. Illum. Co. of Fall River, 11 Ann. Rep. 20 (1895); Malden & Melrose Gas Lt. Co., *ibid.*, p. 29; Haverhill Gas Securities Co., 15 Ann. Rep. 6 (1899) and 16 Ann. Rep. 11 (1900); Haverhill Gas Co., 27 Ann. Rep. 79 (1911); Fall River Gas Works Co., 28 Ann. Rep. 98, reversed by court in 214 Mass. 529.

²See, for example, Grafton County Elec. Lt. & P. Co., 5 N. H. P. S. C. R. 160. In this case, the commission went so far as to refuse to permit a merger on the ground that it would result in an increase of capitalization and would therefore violate the spirit of the law forbidding stock dividends. This decision, however, was overruled by the court (Grafton County Elec. Lt. & P. Co. v. State, 77 N. H. 539, 94 Atl. 193, P. U. R. 1915 C (1904)).

³In rate cases this commission has refused to accept exclusively any one basis of valuation, but has assumed to consider all relevant factors. See the Index-Digests in vols. iv and vi of its *Reports*.

to distinguish between the "fair value" for rate making and the basis of capitalization.

Let us now consider the merits of original investment as the standard in security cases. Of course, its advantages would be clear enough if rate-making value were to be determined by the same method. But, with the important exception of Massachusetts, public service commissions have followed the rulings of courts in refusing to accept that basis in rate cases. On what grounds, then, may it be used as the basis of capitalization?

To this question the answer is two-fold. In the first place, the original investment basis has the practical merit of being stable, whereas most other bases are fluctuating. We have already noted this point as a fatal objection to the use of replacement cost. In the second place, there is a decided advantage in making the par value of the securities stand as a public record of the actual contribution of investors. Even though this contribution may not be used at the present time as the criterion of "fair value" in rate regulation, it should nevertheless be given all possible publicity. Finality in the principles of valuation has been by no means attained; and it is quite possible that publicity of the actual investment, if it should reveal excessive rates of profit, might lead to a radical revision of the present methods of valuation. But even assuming reproduction cost to be the permanent method of valuation in rate cases, it is highly important that investors should know the actual rates of profit on the original investment. Those who support the use of replacement cost as the basis of valuation say that the possibility of gain through unearned increment in the values of land and other fixed capital will serve as an inducement to investors in lieu of a higher rate of return on the original contribution. But this view presupposes not merely the possibility of unearned increment but also the

recognition of that possibility by investors. The best way to advertise the opportunity for future profits is to make known the actual gains in the past; and for that purpose a capitalization restricted to the original investment would be most effective.

(3) *Actual Cost*

This standard resembles the previous one in using original rather than present cost but differs from it in taking the cost of the *entire property*—not merely that part of the cost that was defrayed from the proceeds of security issues. In a word, the difference is this: that actual cost equals original investment plus surplus from reinvested earnings.

Of the many disputable points of rate regulation, few have given the courts and commissions more concern than the treatment of corporate surplus in fixing a "fair value." Is a public service company entitled to a return on the earnings that have been reinvested in the property, or should it be restricted to a fair return on the original contribution? To this question commissions have given different answers, although courts have almost invariably held that a return may be earned on surplus. We are not here concerned, however, with the merits of this controversy. That is a problem in rate making and not a question of capitalization. For us the problem is simply this: Assuming that a company *is* entitled to a return on surplus from reinvested earnings, should it also be permitted to capitalize this surplus by issuing certificates against it?

As we have already noted, public service commissions have to face this problem in connection with applications for permission to issue stock dividends. Such issues are justified by applicants on the ground that they represent actual capital secured by the reinvestment of earnings which might have been distributed among stockholders in the form

of a cash dividend. On this point the laws and practices of the different states vary. We have already observed that Massachusetts and New Hampshire strictly forbid stock dividends. On the other hand, the commissions of New Jersey,¹ Vermont,² Michigan,² Ohio,² Illinois,³ Indiana⁴ and California⁵ have authorized companies to issue stock dividends in order to capitalize a bona-fide surplus from reinvested earnings. Where this practice has been permitted, the actual cost basis of capitalization is generally the accepted principle.⁶

Even some commissions that do not directly permit the use of stock dividends have allowed the same end to be attained by indirect means. In this matter the precedent has been set by New York. Up to 1910, the law of that state provided that a public service corporation might issue securities only for one of the following purposes: (1) the acquisition of property; (2) the construction, completion, extension or improvement of its facilities; (3) the improvement or maintenance of its service; and (4) the discharge or lawful re-

¹ P. U. R. 1917 E 720, 1918 B 240 and 1046. See also a statement by the New Jersey commission of general principles governing its action in security cases, 3 Ann. Rep. N. J. P. U. C. 161 (1912).

² P. U. R. 1916 C 606, 607.

³ P. U. R. 1915 A 205.

⁴ P. U. R. 1915 A 540.

⁵ P. U. R. 1915 C 324, 1916 D 276.

⁶ It would not be correct, however, to say that *all* commissions which permit stock dividends accept the actual cost basis of capitalization. For example, the Maryland Public Service Commission is authorized by law to permit stock dividends when necessary to make the total capitalization equal "fair value," *i. e.*, rate-making value. The California commission on one occasion refused to permit the issuance of a stock dividend on the ground that capitalization would thereby be raised above the rate-making value. Both of these cases have been noted above, under the heading, *Rate-making Value*. But these are exceptional cases.

funding of its obligations.¹ These four conditions, which were copied almost verbatim by other states,² did not seem to authorize security issues for the purpose of capitalizing reinvested earnings—at least, so it was held by the New York Commission for the Second District.³ But in 1910 the law was amended and a fifth clause added, which provides that securities may be issued “for the reimbursement of moneys actually expended from income or from any other moneys in the treasury of the corporation . . . within five years next prior to the filing of an application with the proper commission.”⁴ This new clause, which was soon copied by other states,⁵ entitles a company that has reinvested earnings in its property to capitalize the resulting surplus by issuing new securities. Whether or not the amendment directly permits stock dividends is a point on which commissions have differed. The California Railroad Commission seems to have answered in the affirmative.⁶ On the other hand, the New York Public Service Commis-

¹L. 1907, ch. 429, secs. 55 and 69.

²Several states still retain these four conditions without the amendment presently to be noted. According to my latest information, these states are Georgia, Kansas, Massachusetts, Michigan, Nebraska, and New Hampshire.

³*Re Erie R. R. Co.*, 1 P. S. C. R. (N. Y. 2nd Dist.) 115 (1908); *Re Babylon Elec. Lt. Co.*, *ibid.*, p. 132. On the other hand, the Georgia Railroad Commission, acting on the advice of counsel, held that it was empowered to permit stock dividends under a law similar to that of New York (38 Ann. Rep. Ga. R. C. 31, 93 [1910]). Perhaps, however, the Georgia commission may have based its decision on a clause in the statute, not present in the New York law, stating as a fifth condition that securities may be issued “for lawful corporate purposes falling within the spirit of this provision.”

⁴L. 1910, ch. 480, secs. 55 and 69.

⁵Arizona, California, Illinois, Indiana, Maine, Missouri, Ohio, Wisconsin (Barron, *op. cit.*, p. 179).

⁶P. U. R. 1915 C 324, 1916 D 276.

sion for the Second District does not interpret the amendment of 1910 as sanctioning stock dividends. It holds that, under the fifth clause, securities may be issued only for cash, and that this cash must be used to "reimburse the treasury" for funds that it has already paid out on capital account.¹ But whichever way the law is interpreted, the practical result may be the same. For a company, under the New York ruling, may simply issue stock for cash, and may immediately afterwards pay out that cash in dividends. As the New York commission seems to have recognized,² the outcome in this case would be precisely the same as if the company had issued a stock dividend.³

At the present time, actual cost is by far the most widely accepted basis of capitalization among state commissions.

¹ *Re Central Hudson Gas & Elec. Co.*, 3 P. S. C. R. (2nd Dist. N. Y.) 386 (1912).

² *Ibid.*

³ To the above statement, which the writer published in substantially the same form in a recent article (*Pol. Sci. Quart.*, vol. xxxv [1920], p. 43), exception is taken by Mr. Ledyard P. Hale, Counsel for the New York Public Service Commission, Second District. In a personal letter Mr. Hale writes: "There is a substantial difference between a stock dividend and the temporary use for capitalization expenditures of a surplus which might be paid out in dividends when so used but which in fact is not paid out then but later. As administered by the commission, the Amendment of 1910 simply puts ordinary small expenditures for capital purposes within the business judgment and discretion of directors and avoids applying to the commission every time such a small matter is contemplated."

The present writer is quite ready to accept Mr. Hale's statement that, in actual experience, the law has not yet been used as a means of capitalizing large surpluses and to concede that therefore the law has not yet proved to be a means of evading the prohibition of stock dividends. But the possibility of evasion remains. Is it not probable that the failure of companies hitherto to capitalize anything more than "ordinary small expenditures" has been due to their failure to earn any large surpluses during recent years? And will not the situation be different in the future in the event of a return of prosperity to the public service industries?

What accounts for its general acceptance? Compared to rate-making value—as that value is usually determined—it has the marked advantage of being stable. But, as we have already observed, this merit is also possessed by the original investment basis. Why, then, should actual cost be preferred to the latter standard? In other words, why should surplus be capitalized? To this question an obvious reply would be that, since surplus, under the rulings of the courts, must be counted as part of the property on which investors may claim a return, there is no need to distinguish it from any other part of the investment by leaving it uncapitalized. But that statement may be seriously questioned. At least two reasons may be given for making the distinction between surplus and original capital. In the first place, it is sound financial policy to maintain a surplus as a reserve to equalize dividends over good and bad years and to meet emergency demands.¹ In the second place, it is important to keep a record of the amount of capital contributed by investors as distinct from the amount contributed in earnings by the rate-paying public. What the public wants to know, and what the investors need to know, is the exact relation between the net earnings of a public utility and the contribution of the security holders. This relation can be most clearly seen if the outstanding securities represent, dollar for dollar, the original investment. We have already discussed this point in the previous section.

In view of these serious objections to the capitalization

¹ However, it would not always be necessary to devote the entire surplus to that purpose; a sufficient part might be set aside as a reserve, and the remainder capitalized. Indeed, this compromise measure has been approved by the New Jersey Board of Public Utility Commissioners in a recent security case, in which it allowed a company to issue stock dividends, but required it to leave uncapitalized fifteen per cent of the cost of the property (Toms River Elec. Co., 5 Ann. Rep. N. J. P. U. C. 682 [1918]).

of surplus, why do most states permit the practice? Probably this liberality is due not so much to theoretical principles as to practical considerations of finance. Many public utilities would be unwilling to reinvest earnings in improvements if they were not given the opportunity to capitalize that reinvestment by issuing stock dividends. Therefore in order to induce companies to make improvements out of earnings, commissions have adopted the liberal policy with respect to securities. Whether or not the advantages to be secured by this concession outweigh the disadvantages of concealing the original investment—and hence, the actual rate of profits—is a question which the writer does not attempt to answer. But he would call attention to the fact that the Railroad Securities Commission, in its now famous report to the President, expressed the view that all stock and scrip dividends should be prohibited. "It is far better," said the report, "to let the increased value be shown by a higher rate of dividend on the existing shares of stock, instead of by an addition to their nominal amount."¹

(4) and (5) Market Value and Earning Capacity

According to the market value basis, securities should be issued in such amounts as to make the total par values approximately equal to the market values. All stocks and all bonds must be worth par, or else those which are quoted below par must be offset by those which are quoted at a premium.

Writers on corporation finance have often failed to distinguish between the market-value basis and a kindred but by no means identical basis, usually termed "earning capacity" or "earning power." As the term is currently used, it means simply the expected net earnings capitalized at some hypothetical rate of interest—say four or five per cent. The

¹ *Report of the Railroad Securities Commission*, p. 27.

figure arrived at by this mathematical process is supposed to indicate the proper limit of security issues. Obviously, a capitalization arrived at in this manner may have some relation to the market values of the securities, for these values depend to a very large extent upon the net earnings. But, although the two bases are related, they may differ widely in amount. Everything depends on the rates of capitalization. If "earning power" happens to be computed at the same rate at which the market capitalizes the earnings, it will be identical with market value—otherwise not.

For the most part, commissions have sanctioned neither market value nor earning capacity as the test of proper capitalization. But to this rule there have been exceptions. The public utilities statutes of New York and of Missouri recognize "earning power at reasonable rates" as one of the elements to be considered in determining the "fair structural value" for capitalization in reorganization cases.¹ A more unqualified endorsement of the earning-power theory was given in some early decisions of the New York Public Service Commission for the Second District. In an opinion on the application of the Westchester Street Railroad Company² for permission to issue capital stock, Chairman Stevens discussed at length the proper basis of capitalization. After remarking that value, in the strict economic sense of the word, means nothing but exchange value, he concluded:

In cases where the sole attraction of a property which gives it exchange value, or in other words creates a desire for its ownership, is pecuniary gain, the measure of the desire and hence of the ratio of exchange is clearly the amount of gain which it is believed can be realized. The fundamental consideration indicates that the net earnings rule of valuation,

¹ This point is discussed further on pp. 88-89, *infra*.

² 3 P. S. C. R. (2nd Dist. N. Y.) 286 (1912); decision reversed, 158 App. Div. (N. Y.) 251, modified, 210 N. Y. 456, 211 N. Y. 533.

when properly and carefully applied with due regard to all the features of the individual case, is probably the one having the surest support of basic principles.¹

In the case at hand, the company had failed to earn even operating expenses, but the commission allowed a capitalization of about \$400,000, perhaps as a generous estimate of the earning possibilities for the future. That figure was below the estimated replacement cost depreciated—\$445,694; so that, in this particular instance, earning power was the conservative rather than the liberal basis. This ruling of the New York commission, however, was not unanimous. In an able dissenting opinion Commissioner Sague said:

I disagree with the theory as developed in this case, and believe that too much stress is placed upon the element of earning power, and too little on the other items which determine value . . . the duty of the commission is to approve of an amount of capital which can be used in making up an honest balance sheet which can be applied later, either by the commission or the public, as a basis for determining whether a corporation is giving its customers fair treatment . . . the most important basis for capitalization would appear to be the money which has been skilfully and economically invested in the property.²

A similar majority decision and a similar dissenting opinion from Commissioner Sague were rendered on the application of the Canadian American Power Corporation³ for permission to capitalize a profitable contract for the purchase of electricity.

The Illinois Public Service Commission has also given weight to earning power in certain security cases. In several

¹*Ibid.*, 327.

²*Ibid.*, 342.

³4 P. S. C. R. (2nd Dist. N. Y.) 40 (1914).

instances the commission has permitted a company to purchase property, and to capitalize that purchase, at an amount in excess of the fair value for rate-making purposes.¹ This distinction was justified, in one case, in the following words:

This commission, among others, has heretofore recognized the difference between the value of a utility when used as a basis for fixing schedules of rates and when it is made the object of purchase and sale between a willing buyer and seller. The allowance of the higher value in the latter case may easily be justified upon the grounds that a prospective purchaser may be satisfied with a smaller return upon his money than he may believe the commission would allow him in a possible future rate-making inquiry . . .²

Much the same position was taken by the New Hampshire Supreme Court in overruling a decision of the New Hampshire Public Service Commission, which had refused to allow a desired increase of securities upon consolidation.³ The decision turned partly on the question whether such an increase violated the law forbidding stock dividends and partly on the more general question of the propriety of the proposed capitalization. On both points the commission had decided against the company; but on both points this decision was overruled by the court. According to the court, the value of the property for the purpose of issuing securities should be based on the answer to the question, "What would a single individual, with abundant means, desirous of engaging in the business, but perhaps cautious in making investments, pay for such properties in the situation found upon the data of the capitalization?"⁴ Here the

¹ *Re Ill. Termin. R. Co.*, P. U. R. 1917 B 494; *cf.* also 4 Ill. P. U. C. 850, 855, 859 (1917).

² P. U. R. 1917 B 509-10.

³ *Grafton County Elec. L. & P. Co. v. State*, 78 N. H. 330, 100 Atl. 668, P. U. R. 1917 E 345; *cf.* also P. U. R. 1915 C 1064.

⁴ P. U. R. 1917 E 348.

court apparently accepts "reasonable market value" as the basis for security issues.

The principal argument usually advanced in support of both the market-value and the earning-capacity bases of capitalization rests on the appeal to so-called sound economic theory. Capitalization, it is said, should represent the value of the property. But value, in its strict economic sense, means simply *market* value. Therefore the popular notion that capitalization should be equal to cost,—whether original cost or replacement cost,—rests on an economic fallacy. The proper standard is either market value or earning power, which is the basis of market value.

If the above appeal to "sound economics" could be accepted as having any claim whatever to validity, it would apply only to the strict market-value basis of capitalization and not to the earning-power basis. For current economic theory recognizes no capitalization of earnings at any other rate than the actual market rate. The idea of finding value by capitalizing net earnings at an assumed rate is quite foreign to economic theory.

But irrespective of this point, the argument rests on an invalid assumption; it assumes that capitalization should really be based on value, and that the only problem is to determine what that value is. As a matter of fact, the very opposite is more nearly true. Capitalization might better represent almost any other significant fact than value. For the value may be found simply by reference to current price quotations. Why, then, attempt to indicate it in the par values? The same remark is in point with respect to the earning-power basis. As Cole puts it,

What is the advantage of capitalizing on the basis of earning capacity? . . . The mere schoolboy, if you tell him the earnings of a company, and the rate of interest, can tell you its capitalized value. In other words, to register on the books

a capitalization based on earning capacity is not only to register an unnecessary figure, but to bury the actual cost of the assets.¹

The real grounds, however, upon which the earning-power basis is favored by most financiers are quite different from the theoretical reasons stated above. Securities may be made more marketable if the capitalization is in more or less direct relation to the net earnings. A small issue of stock, paying high rates of dividends, cannot be sold on such favorable terms as can a larger issue that pays the same *amount* of dividends but at lower nominal *rates*. Investors feel that a stock paying only four per cent is safer than a stock paying eight of ten per cent, and therefore they will pay more in proportion for the former.

The earning-power basis of capitalization allows financiers to take advantage of this preference for low-dividend-paying stocks. By making a very liberal and optimistic estimate of the future earnings and by capitalizing this estimate at a high amount,—that is, at a low rate,—they are able to raise market values above the prices that would prevail under a more conservative capitalization.

But when the earning-capacity basis is interpreted and justified in this way, it loses all pretense of representing the value of the property. Capitalization, instead of corresponding to the assets, is really determined at whatever amount will give to the securities their highest market values. The principle was aptly stated by Frederick Strauss when he remarked that “capital seeks that form of expression in the way of stock and bond issues that has the greatest market value.”² Since this principle is at the root of all those evils of stock watering that we desire to prevent, it

¹William Morse Cole, *Accounts, Their Construction and Interpretation*, rev. ed. (Boston, 1915), p. 208.

²*Public Service Magazine*, vol. xiv (1913), p. 99.

will hardly be accepted in defense of earning power as the proper basis of capitalization.

Conflicting Practices of Commissions

Assuming the validity of the principle that nominal capitalization should correspond to actual assets, which of the five proposed bases of valuation should be chosen? In principle, at least, the choice should rest with that basis which will be most useful as a public record. Judged by this test, market value, earning capacity, and perhaps even rate-making value would have to be ruled out—market value because it is easily noted from the stock quotations; earning capacity because it can be computed by anyone who knows the net earnings and the assumed rate of capitalization; rate-making value because it is given so much publicity in rate decisions that some different statistical fact might better be represented in the nominal capitalization. The choice, then, would seem to lie between original investment and actual cost, with the balance in favor of the former.

This, we say, would be the logical choice. But in practice, public service commissions have followed no such line of reasoning. They have used first one basis, then another, then a combination of several—depending on the circumstances of the particular case.

In reorganization cases, especially, one finds the greatest lack of uniformity. For this indefiniteness the state laws are largely responsible. Illinois, for instance, makes the vague requirement that the capitalization of reorganized companies must not exceed the "fair value."¹ Wisconsin places the limit at the "true value."² Still more confusing is the New York law,³ copied almost verbatim by Missouri. It reads as follows

¹ Stats. (1913-16), ch. IIIA, par. 8686 (37).

² Stats. (1919), ch. 85, sec. 1753 (11).

³ Public Service Commissions Law, secs. 55a and 69a.

Upon all such reorganizations the amount of capitalization . . . shall be such as is authorized by the commission which, in making its determination, shall not exceed the fair value of the property involved, taking into consideration its original cost of construction, duplication cost, present condition, earning power at reasonable rates and all other relevant matters and any additional sum or sums as shall be actually paid in cash, provided, however, that the commission may make due allowance for discount of bonds.

This long enumeration of elements to be considered in determining capitalization has the effect of preventing any approach to a definite standard. By proper jugglery of the various factors almost any capitalization may be justified as conforming to "fair value." That such is the outcome in practice is indicated by the recent decisions of the Missouri Public Service Commission, which has been called upon to approve two very important reorganizations under the requirements of a statute similar to that of New York.¹ One looks in vain in these decisions for any scientific basis upon which the various amounts allowed were held to indicate "fair value."

Another striking example of the conflict between different principles of capitalization is to be found in the practice of Massachusetts. The commissions of that state are on record as supporting the original-investment basis of capitalization. According to the Public Service Commission, "the general purpose of the so called 'anti-stock-watering laws' is to limit capitalization to honest and reasonable investment, dollar for dollar."² At another time it said, "our whole anti-stock-watering public utility code rests on the

¹ *Re St. Louis & S. F. R. Co.*, December 22, 1915, P. U. R. 1916 F 49; *Re Dunham* [reorganization of Kansas City street railways], December 28, 1915, P. U. R. 1916 E 544.

² *Bay State Rate Case*, 4 Mass. P. S. C. 33 (1916).

assumption that rates are to be mainly determined by figuring a fair return on capital [*i. e.*, capitalization] and that therefore capital should accurately represent investment, no less no more.”¹ Yet, in two important respects this rule is violated. In the first place, it is violated by the law that the capitalization of reorganized street-railway companies shall not exceed the “fair cost of replacement.”² In the second place, it is violated by the requirement that stock must be sold at a price not materially below its market value, even when that price is above par.³

Attention has already been called to the conflicting practices of the New York commissions. At least four out of the five proposed bases of capitalization have been applied by them at various times. Original investment seems to be the standard implied in the law forbidding the issuance of stock dividends. But the commissions, by allowing the indirect capitalization of surplus under the law permitting the reimbursement of the treasury for capital expenditures, have to that extent supported the actual cost basis. Earning power was the test favored by Mr. Stevens of the Commission for the Second District and applied in two or three important decisions; but rate-making value has on several occasions been favored by the Commission for the First District.

This confusion of principles may or may not be justified. Perhaps it can be shown that no one basis of capitalization is applicable in all cases. But if that is true,—if it is really out of the question to fix a single definite standard,—the whole attempt to make capitalization correspond to assets is of doubtful value. For the purpose of any such attempt is simply to give full publicity to the amount of the assets.

¹ Middlesex & Boston Rate Case, 2 Mass. P. S. C. 99 (1914), p. III.

² R. L., ch. 112, pt. iii, sec. 145 (h).

³ On this point see p. 95, *infra*.

If this purpose is to be attained, the basis for determining the amount must be well known to those who may rely on it. At present, the confusing variety of standards prevents any such knowledge. Only by referring to the reports of the public service commissions—and frequently not even then—can one tell what the nominal capitalization really means. But if anyone is willing to go to that trouble, he will find little use in par values; for he will be able to analyze directly the property accounts of the company without concerning himself about the nominal liabilities.

Practical Difficulties of Equalizing Capitalization and Investment

Even if public service commissions were ready to accept a definite basis of valuation for capitalization purposes, they would still face the almost impossible task of regulating securities on that basis. Indeed, one may say without exaggeration that only in exceptional cases have commissions been able to enforce an equality between capitalization and assets, no matter by what standards the assets may be measured. Two obstacles have prevented success: first, the difficulty of scaling down capitalization already excessive; second, the impossibility of marketing new securities always at par.

The first difficulty is due to the tardiness of the states in assuming control over public utility finance. Except in Massachusetts, security regulation was instituted only after years of almost unrestricted stock watering. The harm had already been done; it could not soon be undone. Drastic measures to enforce the reduction of excessive capitalization have been considered unwise as being not only unfair to present investors but also inexpedient because of the resulting injury to public utility credit pending the readjustment. Most public service commissions have therefore not insisted

upon a scaling down of existing capitalization as a condition of the issuance of new securities. They have attempted simply to prevent further overissues in the future.¹

This rule of letting existing securities alone has not been followed, however, in Massachusetts or in Texas. In both of these states the policy has been to require that existing capitalization shall not exceed the fair value of the property. Massachusetts has been able, usually though not always, to enforce this rule, since overcapitalization had never become very extensive there. Texas, on the other hand, has been much less successful. In 1893 it passed a law forbidding the issuance of bonds in excess of the "reasonable value" of the railway property; but it provided that, in exceptional cases, the face value of stocks and bonds combined might exceed the physical value of the property by not more than fifty per cent. Even with this modification the law discouraged new investments in Texas railways to such an extent that the legislature has been subsequently obliged to make it much less rigid. An act of 1901 provided that under certain conditions roads might issue securities to build extensions without regard to the capitalization of the existing property. Another act, in 1903, authorized the Railroad Commission to make similar allowance in the construction of double track and all necessary appurtenances. But even with these modifications, the Texas statute is still sharply criticized by railway officials as unduly restrictive.

Yet, with all the criticism that has been made of the Texas policy of scaling down existing capitalization, the law has not yet succeeded in making the outstanding securities correspond to the physical values. In 1916, according to the Texas Railroad Commission, the average value per

¹ See pp. 147-50, *infra*.

mile of line on those roads that had been appraised was \$26,779, whereas the average amount of stocks and bonds on that same mileage was \$31,174, leaving an excess of about 16 per cent over the assets.

From these experiences one is forced to conclude that the process of squeezing the water out of the present capitalization of railways will be a hopelessly slow one unless more radical measures are adopted by the federal government than have ever been attempted by our state governments. The only feasible means of equating capitalization and assets will be to require a complete reorganization of our railroad corporations. On many accounts, this may be the very best thing to do. It would fit in well with the plan for consolidation of railways into a few great systems and with the proposal to require federal incorporation of interstate carriers. In the final chapter of this treatise, we shall discuss the wisdom of some such plan. But whatever one may think of the proposal, one must admit that no less thoroughgoing measure—no more gradual scaling down of outstanding securities—is likely to bring about a correspondence between capitalization and assets during any period of time for which it is worth while to plan.

While the first practical difficulty which public service commissions have to face—the difficulty of scaling down existing capitalization—might thus be met by wholesale reorganization, not even this drastic device would solve the second problem—that of keeping new security issues equal to new investments. The difficulty is that stocks and bonds cannot regularly be sold at par. They cannot be sold at par for the reason that it is often necessary to issue securities of the same class, bearing the same rate of interest and dividends, at different times and under different conditions of the market. Even though the original issue were to be sold at its full face value, subsequent issues might not be saleable at half that price.

Public service commissions have tried in various ways to meet this difficulty. In some states, commissions require companies that are unable to sell their stock for par to issue bonds or notes. Even the bonds, to be sure, may have to be sold at a discount; but the discount may be amortized by charges against income. This recourse to bonds as a means of avoiding the sale of stock below par cannot be too strongly condemned. In the first place, so long as the bond discount remains unamortized, the purpose of preventing overcapitalization is not attained. In the second place, the prevention of overcapitalization is not worth the cure of overbonding. Most authorities agree that an excess of total par values is less serious than an overweight of debt.¹ Our public service laws, by stressing the former at the expense of the latter, are committing an error of the gravest character.

In other states, the commissions have frankly violated the orthodox principles of capitalization by permitting the sale of stock below par.² A few of the eastern states have done this to a limited extent,³ but in several western states, in California and Arizona, for example, the sale at a discount is the rule rather than the exception.

¹ See *Report of Railroad Securities Commission*, p. 25.

² Heilman, *op. cit.*, pp. 899-903; Barron, *Annals, Amer. Acad. Pol. & Soc. Science*, vol. lxxvi (March, 1918), pp. 185-7.

³ For example, Maine requires that companies newly organized must sell their stocks at par, although old companies may be allowed to issue them at a discount. (See 1 Me. P. U. C. 51 [1915] and *Applic. of Black Stream Elec. Co.*, P. U. R. 1915 C 361). New York forbids by law the sale of stock below par; but the Public Service Commission for the 2d District has at least on one occasion sanctioned an evasion of this law by permitting the Erie Railroad to issue bonds at 85 which were convertible into stock at the rate of \$200 in stock for every \$100 in bonds (*Re Erie R. R. Co.*, P. U. R. 1916 D 113). The Wisconsin law prohibits the issuance of stock below par, but the Secretary of the Wisconsin Commission, Mr. H. L. Geisse, recently advocated a modification permitting sale at a discount (*Electric Railway Journal*, vol. xlvii [1916], pp. 602-3).

The fact that commissions have been obliged constantly to violate the accepted principle of equality between capitalization and assets is convincing evidence that the principle itself is unworkable. Indeed, so far as the writer can see, there is only one feasible way by which public service commissions might prevent capitalization from exceeding the investment; that is by keeping it ordinarily *far below* the investment. If railroads were as a general rule *undercapitalized*, they might never find it necessary to overstep the limit of fair value.

Precisely this method of procedure has been adopted in Massachusetts; and it is by means of this expedient that Massachusetts, alone of all the states, is able to claim that the capitalization of its public utilities (at least of its gas and electric companies) does not exceed their reasonable cost. For years this state has required public service corporations to sell their stocks at heavy premiums, whenever the market prices would justify those premiums. By this means, and by the consistent refusal of the regulating commissions to allow the capitalization of surplus, the market values of gas and electric stocks have for the most part been kept so high that the necessity of sale at a discount has been avoided.

This resort to undercapitalization as an alternative to overcapitalization has much to be said in its favor. Some persons, indeed, go so far as to hold that undercapitalization, so far from being an evil, is a positive good. To err on the safe side, they say, is an advantage. This view is very similar to the position taken by some accountants, that an undervaluation of assets for the property account should be encouraged.¹ But whatever one may think of the wisdom of undercapitalization with respect to industrial companies,

¹ This position, however, is not accepted by the best American authorities; see, for instance, H. R. Hatfield, *Modern Accounting* (New York, 1913), pp. 83-5.

one must admit that the practice, as applied to public service companies, has serious objections. The first and minor objection is that it would necessitate the sale of stock at premiums—that is, at prices above par. Now the experience of the stock market proves that investors are reluctant to pay high premiums for stocks. They feel that the par value indicates, to some extent, the normal value and that therefore a higher price is excessive. As a result, stock cannot be sold at a high premium unless the dividend rate is sufficient to yield a higher return on the investment than would have been necessary if the stock were selling around par. Of course, this higher yield is a tax on the rate-paying public.

Much more serious, however, is the second objection—that undercapitalization causes the public to underestimate the actual investment and therefore to exaggerate the rate of profits. Needless to say, such a misapprehension would be almost sure to do harm. It would probably lead to government action to reduce profits below a reasonable return—a result not only unfair to investors but also disastrous to railway credit. One of the most critical questions that will arise when the government establishes a really effective control over the profits of public service corporations is whether the public, when it knows the actual rate of profits in these enterprises, will be sufficiently liberal in its judgment of what constitutes a reasonable rate of return. There is danger that no adequate allowance will be made for the risks of the business. Some writers, indeed, aware of the popular tendency to begrudge more than a “savings-bank” rate of interest, have gone so far as to defend, or at least to condone, stock watering as a necessary safeguard against this prejudice. Of course, such a defense will not be accepted by anyone who really believes in democracy. The public has the right to know the facts even though it may

sometimes misuse those facts. But it also follows that the public should not be misled by an *understatement* of the investment any more than by an *overstatement*.

Attempt to Equalize Capitalization and Assets Unnecessary

The conclusion to which the above discussion has led—that the principle of correspondence between capitalization and assets cannot be realized in practice—would be a gloomy one were it not for the fact that it is as unnecessary as it is impracticable. If the amount of the assets is known and given full publicity, what need is there of attempting to set up an equivalent face value in bonds and stocks? The balance sheets, if correctly kept, will show the actual investment. All that is required is that the property accounts be kept on a strict cost basis.

The trouble in the past has been that accurate records have not been kept. Companies have not only watered their securities, but they have also concealed the presence of that water by a corresponding overvaluation of the assets. For this reason it has been quite impossible to find the actual investment by consulting the balance sheets. But this difficulty need not prevail in the future, for commissions are requiring, with increasing strictness, that property accounts should show the actual costs.

Only one serious objection can be urged against this proposal to disregard par values. So deeply set is the notion that par values represent actual property, that people might continue to attribute a significance to nominal capitalization even after the true investment had been made public. This danger, as we saw in the previous chapter, is a real one. But there is one possible way to overcome it—namely, to issue capital stock without par value. In the following chapter, we shall discuss at length this much debated expedient.

SUMMARY

According to the generally accepted theory, nominal capitalization should correspond to the cost or to the value of the property. The standard for determining that cost or value has been much in dispute. No less than five possible bases have been given weight in the decisions of public service commissions. They are (1) rate-making value, (2) original investment, (3) actual cost including surplus derived from reinvested earnings, (4) market value, and (5) earning power.

The two bases that have been most generally favored by commissions are original investment and actual cost. Usually, one of these two has been used even when some other standard of value has been accepted for rate-making purposes. But the practice of commissions has been far from consistent; and no one basis has been adopted to the exclusion of all others.

No matter what basis the commissions have accepted as the test of proper capitalization, they have never been able to apply it rigorously in actual practice. The history of security regulation from its commencement in the nineties down to the present time testifies without exception in any state that the attempt to secure even an approximate balance between par values and actual investment is foredoomed to failure. It has resulted in the curbing of investment, as in Texas; in dangerous recourse to bonds because of inability to issue stock at par, as in New York; in the violation of the principle by undercapitalization, as in Massachusetts; or in the almost complete abandonment of the principle by overcapitalization, as in California and in other western states. Nowhere has it succeeded; nowhere can a public service commission point to the capitalization of companies under its jurisdiction as an indication of the actual investment in the property.

In view of these facts, the attempt to use nominal capitalization as a record of the investment should be frankly abandoned. In that case, either of two proposals might be accepted: first, to allow the par values to remain but to recognize them merely as a convenient fiction; second, to issue capital stock without par, thus removing nominal capitalization as a source of deception. Having noted a serious objection to the first plan, we turn, in the following chapter, to the alternative measure.

CHAPTER IV

SHARES OF STOCK WITHOUT PAR VALUE ¹

¹ FAVORING THE REMOVAL OF PAR VALUES: *Proceedings of the New York Bar Association*, vol. xv (1892), p. 137 *et seq.*, and vol. xxxii (1909), pp. 270-82; Testimony of F. L. Stetson before the United States Industrial Commission, *Report*, vol. i (1900), p. 976; Edward M. Shepard, Annual Address before the Bar Association of New Hampshire, *Proceedings*, vol. ii, Old Series (1906), pp. 273-97; E. M. Shepard, "Corporate Capitalization and Public Morals," Address before the Illinois Bar Association, *Proceedings*, 1907, pt. ii, pp. 29-60; Frederick Dwight, "Par Value of Stock," *Yale Law Journal*, vol. xvi (1907), pp. 247-52; Chairman Frank W. Stevens, *Decision In re N. Y. C. & H. R. R. and R. & E. Rapid Ry. Co.*, 1 P. S. C. R. (2d Dist. N. Y.) 294, 315 (1908); *Report of the Railroad Securities Commission* (1911), pp. 25-26; R. S. Lovett, *Statement before the Railroad Securities Commission, December 21, 1910* (New York, 1911?), pp. 16-18; R. S. Lovett, Testimony before the "Newlands Committee" (*Hearings before the Joint Committee on Interstate and Foreign Commerce Pursuant to Public J. Res. 25 . . .* [Washington, 1916-18]), pp. 686, 707; Victor Morawetz, "Shares Without Nominal or Par Value," *Harvard Law Review*, vol. xxvi (1913), pp. 729-31; National Association of Railway Commissioners, *Proceedings*, 1913, pp. 197-98, and 1916, p. 241 *et seq.*; Frank White, *White on Corporations*, 8th ed. (New York, 1915), pp. 367-73; Hastings Lyon, *Corporation Finance* (Boston, 1916), pt. i, pp. 104-5.

OPPOSING THE REMOVAL: Arthur K. Kuhn, *A Comparative Study of the Law of Corporations* (New York, 1912), p. 115; William Z. Ripley, *Railroads: Finance and Organization* (New York, 1915), pp. 91-4; William Morse Cole, *Accounts, Their Construction and Interpretation*, rev. ed. (Boston, 1915), p. 207; Milton B. Ignatius, *The Financing of Public Service Corporations* (New York, 1918), pp. 78-83 (Doubts value of the removal as applied to public utilities subject to financial control by commission).

DESCRIPTIVE: John Adams, Jr., "Stocks and their Features—a Division and Classification," *Annals, Amer. Acad. Pol. and Soc. Science*, vol. xxxv (1910), pp. 526-7; Halford Erickson, *Regulation of Public Utilities:*

To those who accept the position, maintained in the previous chapter, that the attempt to secure equality between nominal capitalization and actual assets is neither feasible nor necessary, it will probably appear desirable to take the logical step of abandoning all pretense at such equality. Already the means of securing this object has been suggested, namely, the issuance of shares of stock without par values. But since this proposed measure has been criticized no less than favored, we shall devote a chapter to the discussion of its merits.

*History of the Proposal*¹

Credit for originating this device for meeting the evils of watered stock is accorded to a committee of the New York Bar Association, which in 1892 proposed an amendment to the New York corporation laws by which private corporations should be permitted to issue shares of common stock without nominal value.² But the general principle of recognizing shares simply as participation certifi-

Three Discussions (Madison, Wis., 1911), pp. 61-2; Franklin Escher, "Without Par Value," *Harper's Weekly*, vol. lvi, May 11, 1912, p. 22; Thomas Mulvey, *Company Capitalization Control* (Ottawa, Ont., 1913), pp. xcvi-cv; Thomas Mulvey, "Blue Sky Law," *Canadian Law Times*, vol. xxxvi (1916), p. 43; Edward S. Mead, *Corporation Finance*, rev. ed. (New York, 1915), pp. 45-6; Charles W. Gerstenberg, *Materials of Corporation Finance*, 3d ed. (New York, 1915), pp. 43, 47; W. F. Moody, Jr., "The Value of Par Value," *Moody's Magazine*, vol. xix (1916), pp. 129-30; Albert W. Atwood, "New Devices of Finance," *McClure's Magazine*, vol. xlvii, July, 1916, pp. 64-5; Robert J. Bennett, *Corporation Accounting* (New York, 1917), pp. 89-91; Roy B. Kester, *Accounting: Theory and Practice*, vol. ii (New York, 1918), pp. 9-10, 20; F. H. Hurdman, "Capital Stock of No Par Value," *Journal of Accountancy*, vol. xxviii (1919), pp. 246-57; Arthur S. Dewing, *The Financial Policy of Corporations* (New York, 1920), pt. i, pp. 13-15.

¹ Cf. *White on Corporations*, 8th ed., pp. 371-73.

² New York Bar Association, *Proceedings*, vol. xv (January, 1892), p. 137.

cates was by no means new. The Bar Association committee referred to its use in German corporation finance, while a later writer noted that its "general adoption in practice . . . would bring us back to the joint-stock type of the Sixteenth, Seventeenth and Eighteenth centuries."¹

A few years after this committee had made its original report, one of its members, Mr. F. L. Stetson, repeated the proposal in testifying before the United States Industrial Commission.² Again in 1909 the same committee, in a report to the Bar Association, renewed its recommendations³ and submitted a draft bill for consideration by the New York Legislature.

In 1912, just twenty years after the first favorable report by the committee of the Bar Association, New York State took the lead by adopting the measure as a part of its corporation law. By this act business corporations are permitted to issue shares without par value, other than preferred shares with a preference as to principal.⁴

The example of New York was soon followed by other states. According to a recent count, nine others have already amended their corporation laws to permit the issuance of no-par shares: Maryland (1916), California (1917), Delaware (1917), Maine (1917), Virginia (1918), Illinois (1919), Pennsylvania (1919), New Hampshire (1919), and Ohio (1919).⁵ It seems entirely probable

¹ Arthur K. Kuhn, *A Comparative Study of the Law of Corporations*, p. 115.

² *Report*, vol. i (1900), p. 976.

³ *Proceedings*, vol. xxxii (Jan. 1909), pp. 270-82.

⁴ L. 1912, ch. 351, amended by L. 1917, ch. 500.

⁵ F. H. Hurdman, "Capital Stock of No Par Value," *Journal of Accountancy*, vol. xxviii (1919), p. 255. Mr. Hurdman's timely article makes it unnecessary to present in this chapter an analysis of the provisions of the different statutes.

that within the next few years similar legislation will be generally adopted throughout the United States.

Up to the present time, however, most of the states that have provided for shares without par value have refused to extend the privilege to certain important classes of corporations. New York has set the example here by excepting from the provisions of the act not only banking companies but also public service corporations.¹ These latter companies were excluded because they are under the special supervision of the public service commissions; their securities can be issued only after being approved by the proper commission. Security regulation, it was believed, would prevent stock watering on the part of public utilities and would therefore make unnecessary the resort to no-par shares as a cure for overcapitalization. Whether or not such a belief is justified is a question that we shall discuss presently. But here we must note that the New York precedent of requiring the retention of par values for public utility securities has not been universally accepted. Even before the passage of the New York act, Mr. Stevens of the New York Public Service Commission for the Second District raised the question whether the removal of par values from public utility stocks would not be a wise action.² Two years later, in 1910, the Railroad Securities Commission gave its unqualified support to a proposal to permit interstate railways to issue shares of stock without par value.³ Subsequently, members of the

¹ But the provision excluding public utilities has been circumvented, to some degree, by the holding company device. At least two public utility holding companies have issued common stock without par value under the New York law: the Interboro Consolidated Corporation and the Western Power Corporation. (See p. 105, note 3, *infra*.)

² *Re N. Y. C. & H. R. R. and R. & E. Rapid Ry. Co.*, 1 P. S. C. R. (2nd Dist. N. Y.) 294, 315 (1908).

³ *Report*, p. 25.

Wisconsin Railroad Commission¹ and of the California Railroad Commission² have endorsed the proposal as applied to all public utilities.

Influenced, no doubt, by these favorable opinions, several states have permitted public service corporations as well as business corporations to issue shares without par value. The recent amendments to the corporation laws of Delaware, Maryland, Pennsylvania, and Virginia, providing for the issue of stock without par value, contain no clause excluding public utilities from the provisions of the acts. In the cases of Delaware³ and Maryland,⁴ however, there is some

¹ Mr. Roemer, Chairman of the Wisconsin Railroad Commission, in an address before the Southern Gas Convention, Mobile, Ala., April 23, 1914, cited by Fred L. Holmes, *Regulation of Railroads and Public Utilities in Wisconsin* (New York, 1915), p. 240. On the other hand, Commissioner Erickson of the same commission expressed himself as undecided as to the wisdom of permitting no-par shares: *Regulation of Public Utilities: Three Discussions* (Madison, Wis., 1911), pp. 61-2.

² Commissioner Edgerton in decision *re* Pacific Gas & Elec. Co., P. U. R. 1915 C 325, and the late Commissioner Eshleman in address before the National Association of Railway Commissioners, *Proceedings of Twenty Fifth Convention* (1913), pp. 197-98.

³ In Delaware there is a law (Rev. Code 1915, ch. 65, sec. 102) which requires that railroad companies incorporated and operating in that state must indicate in their Articles of Association the amount of capital stock, "which shall not be less than five thousand dollars for every mile of road proposed to be constructed." A similar provision applies to electric railways, except that the amount is here two thousand instead of five thousand. I am informed by the Secretary of State of Delaware that his office regards this law as preventing the issuance of stock of no par value by companies of the above-mentioned class. He writes: "If you should have no capital stock [with a par value] of a corporation incorporated under the provisions of section 102 of the General Corporation Laws, there would be no way whereby this office could know that the fourth paragraph of this section would be complied with."

⁴ In Maryland the right of railroad corporations to issue shares without par value is made doubtful by a provision of the Maryland statutes (Annotated Code, Article 23, sec. 264) stating that the capital stock of

doubt whether railroad corporations may issue no-par shares in view of the fact that the older statutes applying specifically to that class of corporations may perhaps be held to require the use of stock having a par value. The law of California specifically provides that all public service corporations may issue stock without par, but only with the approval of the Railroad Commission. Illinois and New Hampshire exclude railroads but do not exclude other public utilities. Ohio and Maine follow the New York precedent by excepting all public service corporations.

During the first few years after the passage of the New York act of 1912, only a few corporations took advantage of the privilege of issuing stock without nominal value. There was a natural hesitation lest the new device might not prove popular with the investing public. But experience soon proved such fears to be groundless; investors have accepted no-par shares quite as readily as any others.

Judging from the newspaper prospectuses of recent months, one may conclude that the use of common shares without par value has now become the rule rather than the exception for newly incorporated companies.¹ Even several of the large older corporations have exchanged their former shares for the newer type.² Only a few public service companies, however, have as yet followed the example of the industrials.³ This is doubtless to be explained by

a railroad corporation shall be divided into shares of fifty dollars each. I am informed by Mr. James Piper of the Baltimore law firm of Piper, Yellot, Hall & Carey that the courts have not yet rendered a decision as to whether or not this clause applying to railways is superseded by the subsequent act permitting corporations in general to issue no-par shares.

¹*E. g.*, Cuba Cane Sugar Corp., Kennecott Copper Corp., Submarine Boat Corp., Allied Packers, Inc., United Retail Stores Corp. (preferred stock also without par), Atlantic Lobos Oil Co., Shaffer Oil & Refining Co.

²*E. g.*, B. F. Goodrich Co. and General Motors Corp.

³*E. g.*, Penn Central Light & Power Co., incorporated in Pennsyl-

the fact that it was not until the year 1916 that any state permitted such action on the part of utility corporations and that, since then, the financing of public service enterprises has been at a very low ebb.

Advantages

The main object of the reform that we have been discussing is to remove the fictitious element in corporation finance. The par value of a share of stock can have no significance except in so far as it represents actual assets. In the theory of the law, that is just what it is supposed to represent; in practice, it represents nothing of the kind. This divergence between theory and practice is due in part to the lax corporation laws of several states; but it is also due to another cause which cannot be removed; namely, to the impossibility of issuing stock always at par regardless of the conditions of the market.

Since, therefore, par value cannot serve its intended purpose of indicating the actual capital, it may better be removed instead of being allowed to remain as a source of

vanity (common and preference shares without par value). At least two public utility holding companies, incorporated in New York, have issued common shares without par value: the Western Power Corp. (of California) and the Interboro Consolidated Corp., a company holding the securities of the New York City railway companies (see p. 103, note 1, *supra*). A number of voluntary associations, organized under the Massachusetts law to hold the securities of public utility companies, have issued participation shares without par value: *e. g.*, Boston & Worcester Electric Companies, Boston Suburban Electric Companies, and Central Massachusetts Light and Power Co. In the first two cases, both the preferred and the common shares are without par value, while in the last, the preferred shares retain the par value. The Chicago Elevated Railways, a voluntary association organized under the laws of Massachusetts, has issued preferred and common shares which are "expressed as of a par value of \$100," but which are carried on the books at no valuation (see p. 119, note 1, *infra*). The Chicago Railways Co., an Illinois corporation, has issued capital stock of the merely nominal amount of \$100,000; this stock is held in trust, and against it are issued 265,100 "participation certificates" without par value.

deceit to unwary investors. The removal may be expected to have the wholesome effect of forcing the attention of investors upon the value of the property behind their securities rather than on the nominal amount of those securities. This result, if it can be achieved, will mark a great advance in corporation finance; for too often have investors been deceived by their assumption that a large nominal capitalization means an equally large investment. To eliminate this danger of deception would be to remove one of the serious evils of stock watering.

To be sure, it must be admitted that the mere use of shares without par value will not *alone* cure the evils of stock watering; for the removal of par value does not remove *all* the sources of deception to which the unwary investor is subject. On this point a word of caution has already been uttered;¹ and it will be repeated in a later section of the present chapter in order to emphasize the need for further safeguards. But the truth of this admission does not weaken the force of the fact that *one* source of deception may be removed; and that consideration alone justifies the reform.

The opinion has sometimes been advanced that the use of shares without par value, while suitable for business corporations, should not be extended to railroads or to other public service corporations whose securities are subject to control by a government commission. This view accounts for the failure of New York and other states to include public utilities among those corporations that may issue stock of no par value. Regulation of securities is thought to be an alternative to the removal of par value; the one measure aims to prevent stock watering by making the par value equal the investment, while the other would secure the same end by abolishing the par value entirely.²

¹ P. 57, *supra*.

² Cf. Ignatius, *Financing of Public Service Corporations* (1918), p. 83,

If commission regulation could in fact secure an approximate balance between nominal capitalization and actual investment, one might concede the wisdom of retaining the par value of public utility stocks. But, as we have already noted in the previous chapter, no such results have been secured, nor is there any likelihood of success in the future. In a large number of cases, par values will either understate or exaggerate the actual contribution made by the investors. Therefore as long as par values are retained, they will remain a source of misinformation.

Of course, one may freely admit that careful control of securities by a commission will greatly reduce the danger of deceit occasioned by fictitious par values. Not only will the more extreme forms of stock inflation be prevented, but, what is even more important, the investing public will be informed as to the actual capital in the enterprise, so that it may discount any excessive stock issues. Yet, with all these cautions, the danger of misunderstanding is merely minimized but not removed so long as the par value remains. The "magic of par value" is too potent to be entirely eliminated by a program of publicity.¹

But there is even a stronger reason for removing the par value of public utility stocks. Unless it is removed, commissions will still feel under obligation to *strive* for an approximate equality between capitalization and investment. Of course they will not succeed,—they never have succeeded,—but instead of abandoning all effort to secure an equality, they will make the attempt to come as near to a balance as is at all practicable. They will permit the issue of stock below par—but only as a last resort, rather than as a regular and proper procedure. This, at least, has been the tendency of state commissions up to the present time; and it is almost sure to continue to be the policy in the future, owing to the popular hostility to stock watering.

¹ See pp. 59-61, *supra*.

This half-way measure—this *partial* abandonment of the attempt to make capitalization correspond to assets—is in many ways more dangerous than would be the complete recognition of par values as a mere fiction. In the first place, it serves to strengthen rather than to weaken the illusion on the part of investors that par value represents the actual investment. In the second place, it causes commissions to approve the resort to excessive bond issues as a means of avoiding the necessity of selling stock below par. This second tendency was noted in the last chapter as a serious objection to security regulation as now practised by state commissions; but it is almost inevitable as long as commissions are under pressure to prevent the sale of stock at a discount. The only adequate means of removing this pressure is to remove the par value, so that stock may be issued at whatever prices are justified by market conditions.

One special advantage of shares without par value deserves particular emphasis at the present time; namely, their convenience in cases of reorganization and consolidation. Few will deny that any program of railway reform has little chance of solving the present difficulties of our interstate transportation systems that does not involve, first, a reorganization of unwieldy financial structures and, second, a consolidation of certain independent roads into larger groups. Heretofore, however, both of these financial operations have usually resulted in an increase rather than a decrease of nominal liabilities. It is true that, in recent years, when reorganizations and consolidations have been subject to the approval of state public service commissions, the tendency to inflation has been partly eliminated. But even in these cases, commissions have usually found it impossible to enforce a rigid scaling-down of capitalization to the point of equality with the assets. The obstacle has been the reluctance of security holders to accept

new securities of a lower *par value* than that of the stocks and bonds which they are asked to surrender. To be sure, the commissions might have insisted on such an exchange; but in the case of consolidations, that requirement might have caused the stockholders to abandon their plan for a merger, while in the case of reorganizations, it would have led the security holders to decline either to pay assessments or to subscribe for new securities.

The use of shares without par value, however, will make it much easier to consolidate or to reorganize on a sound financial basis. Because of the removal of par values, there will not be the same need for a stringent reduction in the number of shares; the holders of one share of old stock may be given with less reluctance one share of new stock, since the new stock indicates nothing as to the amount of investment represented by each share.

The special convenience of shares without par value in the above cases was noted by the Railroad Securities Commission. Its statement on this point is worth quoting in full:

Where two roads have consolidated whose shares have different market values, it has been the custom to equalize the difference by the issue of extra shares of the consolidated company to the owners of the higher priced stock. This practice has always tended to produce increase of capital issues, and may readily cause the new stock to be issued for a consideration less than its par value. The only alternative was to scale down some of the old stocks; and this often involved serious difficulties, both of business policy and of law. By the simple expedient of omitting the dollar mark from the new shares, the number can be adjusted to the demands of financial convenience, without danger of misrepresentation or suspicion of unfairness to anyone.¹

In the case of reorganizations, the advantage of shares with-

¹ At this point the opinion of the Securities Commission seems over-optimistic. Even when the par value is removed, there is some danger

out par value is even more obvious. It is here that the necessity and justice of getting money from stockholders is greatest. It is here that the impossibility of getting them to pay par for new shares is most conspicuous. We believe that in such cases the public interest would be subserved and the speedy rehabilitation of the roads promoted, by requiring the conversion of the common stock and encouraging the conversion of the preferred stock into shares without par value; the certificates simply indicating the proportionate or preferential claims of the holders upon assets and upon such profit as might from time to time be earned.¹

Alleged Objections

Having noted the advantages to be gained by authorizing railroads to issue shares without par value, we must now discuss the supposed objections. At least six criticisms have been made, each of which we shall consider in turn.

I. *That the removal of par value will encourage inflation by making easy the issue of an excessive number of shares.* This point was discussed by the Railroad Securities Commission. It remarked:

The danger of inflation deserves more serious consideration. We believe, however, that it is more apparent than real, because shareholders will be jealous of permitting other shareholders to acquire shares in the association except at full market value, and will not permit the issue of such shares to themselves at prices so low as seriously to impair the market or other value of their holdings. Shares either with or without par value, and whether sold at par or above par or be-

that an increased number of shares may give a false impression of an increase in value. On this point see pp. 126-27, *infra*. However, it can hardly be doubted that the use of no-par shares will *reduce*, even though it does not *remove*, the danger.

¹ Report, p. 26. (21)

low it, should, except in cases of consolidation and reorganization, be offered in the first instance to existing shareholders *pro rata*.¹

But the above comments of the Securities Commission leave some important points unanswered. In the first place, it is not clear what is meant by inflation in the case of no-par stock. If each share represents, not a fixed amount, but merely a fractional interest in the total capital, whatever that capital may be, is any significance to be placed on the number of shares into which the total stock is divided? And if the number of shares does indeed have a significance,—if the possibility of inflation still exists after the par value is removed,—is the Securities Commission correct in assuming that the self-interest of the shareholders will prevent such inflation? An answer to the first question has already been suggested in an earlier chapter.² There we saw that the danger of inflation persists in spite of the removal of par value. Further discussion of this point is deferred to a later section of the present chapter. As to the second question, it must be admitted that the reply of the Securities Commission is not entirely convincing. In the past, when stock had a par value, the self-interest of shareholders did not suffice to prevent inflation. Why, then, should it suffice with the par value removed?

One must concede, then, that the danger of inflation remains in spite of the use of no-par shares. Indeed, one might argue that, in the absence of all restrictions on the issuance price, the danger may even be increased. That fact, however, does not condemn the removal of par value from the shares of public utilities and railroads. For, since

¹ Report, p. 26. (1905)

² P. 57, *supra*.

the issue of shares is to be subject to control by commission, the danger of inflation is equally well guarded against, whether the par value is removed or not.

2. *That the removal of par value will encourage the flotation of shares of low market value—a result conducive to overspeculation.* This point is somewhat similar to the previous one. Ripley gives it as one reason for his opposition to the use of no-par stock. “The abolition of par value,” he says, “permitting carriers to issue capital stock for relatively small sums in cash, cannot but encourage speculative interest in railways—an element of danger much to be deplored.”¹

This view accepts a prevalent assumption that a low market value gives shares a speculative character. But to what extent is this assumption justified? To be sure, it must be admitted that, in the experience of the stock-market, low-priced shares have generally been of a speculative nature. But the relation is not to any considerable extent one of cause and effect. What gives these shares their speculative character is the low value, not so much of each separate share, but of the total stock issue as compared with the value of the entire property represented by both bonds and stocks. In other words, it is primarily the narrow equity of the stock issue as a whole which makes the shares subject to such wide market fluctuations. The extreme width of the fluctuations is due, first, to the fact that a *slight* change in the earning power of the property will cause a *great* change in the balance of the earnings available for the stock, and, second, to the fact that a controlling interest in the enterprise may be bought with a relatively small outlay of capital. Both of these factors tend to make the stock a gamble rather than an investment.

¹ *Railroads: Finance and Organization* (New York, 1915), p. 94.

The fact that low market values *per share* have been a symptom rather than a cause of speculation is well exemplified in the case of the Rock Island financial manœuvres, so well described by Ripley.¹ It was the narrowing of the controlling interest to an investment of only about fifty million dollars and the complete wiping out of the equity of the holding company's stocks which made the securities a football for speculation. Would anyone anticipate similar results if Pennsylvania capital stock, or Northwestern preferred or common were to be divided into one-dollar shares, leaving the total investment unchanged? Does anyone suppose that Liberty bonds are much more speculative because they are issued in fifty-dollar denominations instead of merely in thousand-dollar denominations—or, on the other hand, that mining stocks would become steady investments if they were only marketed in hundred-dollar shares instead of in one-dollar shares?

One must admit that there is a *certain minimum* of truth in the assumption that the low price of a share tends in itself to make it speculative. It arises from the fact that people of small means can afford to speculate more freely in low-priced stock. But if public policy requires the curbing of this small-scale gambling, much more effective means may be found than the retention of a par value. For example, a minimum tax might be placed on the transfer of all shares of stock in whatever amounts, so that the small transaction would be discouraged by the disproportionately high tax. Or, again, the law might fix a minimum price below which shares without par value might not be issued. Indeed, that very thing is done by New York State, which requires that shares without par value must represent a capital of at least five dollars or some multiple thereof per share. Instead of five dollars, the minimum might be set

¹ *Op. cit.*, pp. 524-32.

at fifty or one hundred dollars, or at any other desired amount.

3. *That the removal of par value will release stockholders from their liability to creditors for the full payment of their subscriptions.* Under the limited-liability laws, stockholders in corporations are liable for the corporate debts only to the amount of their stock subscription as measured by the par value of the shareholdings. If a creditor finds that stock has been issued without a corresponding payment to the company in cash or property, he may sue the stockholders for unpaid claims up to the amount still due on the stock subscription. Now, some writers fear that the abolition of par value will take from creditors this safeguard. For in that case there can be no liability to make good the difference between the nominal value of the stock and the amount actually paid in on that stock.¹

This objection, however, can readily be met. The recent state laws permitting the issuance of shares without par value have met it in two ways. The first way, adopted by New York, California, and Maine, is to forbid the issuance of part-paid shares and to make the corporate directors personally liable for violation of this provision.² The second way, adopted by Delaware, is to permit the issuance of part-paid shares, but to make shareholders liable to the

¹ Ripley makes this criticism (*Railroads: Finance and Organization*, p. 94).

² For instance, the Maine law (L. 1917, ch. 144) reads: "No corporation formed pursuant to section one hundred and fifteen hereof shall begin to carry on business or shall incur any debts until the amount of capital stated in its certificate of incorporation shall have been fully paid in money or in property taken at its actual value. In case the amount of capital stated in its certificate of incorporation shall be increased as hereinafter provided, such corporation shall not increase the amount of its indebtedness then existing until it shall have received in money or property the amount of such increase of its stated capital."

corporation's creditors for all amounts due on their subscriptions.¹ This second expedient retains the same safeguards that are present under the old system, with a simple modification to the effect that stockholders are liable *for whatever amount they have agreed to pay* rather than for an amount equal to the par value of their shares. So far from taking away any protection from creditors, this new measure may even increase the protection. Up to the present time, as every student of corporation finance knows, the laws making shareholders liable for full payment on their stock have proved but a very meager safeguard to creditors. A part of the difficulty has been due to the unwillingness of courts to hold shareholders responsible for full payment in cases where it was impossible for the issuing company to market its stock at par.² But where the liability is fixed, not by a par value, but by the amount subscribed for each particular issue, the reasonableness of the liability for any unpaid balance is so clear that a much more rigid enforcement of the law may be expected.

4. *That the removal of par value will make it easier for promoters to retain an excessive amount of the stock as a reward for their services.* In the past, one of the great evils connected with the promotion of American railroad corporations has been the exorbitant profits that promoters have made by taking an excessive amount of stock in payment for their activities. Of course, the disproportionate interest that the promoter secures lessens by so much the

¹The Delaware Law (L. 1917, ch. 113, sec. 10) reads: "... in the case of stock without par value, this liability [for the unpaid balance on subscriptions to stock] shall be limited to the unpaid balance of the consideration for which such stock was issued by the corporation, which said sum or proportion thereof may be recovered as provided for in section 49 of this Chapter . . ."

² Cf. *Handley v. Stutz*, 139 U. S. 417 (1891).

value of the holdings of *bona fide* investors; it exacts a tribute which must be paid either by the other stockholders in the form of lower dividends or by the public in the form of higher transportation rates. It is feared by some that this evil, bad enough under the old order of things, may become even more serious if the par value is removed from the stock. The dollar sign, it is thought, does serve to some extent to restrain the promoter from taking an excessive amount of stock. It serves to impress upon the other shareholders the size of the slice which the promoter proposes to cut for himself. "Ten thousand shares" of stock as a reward to the promoter might not sound as exorbitant as a "million dollars of stock".¹

The force of this objection, however, may be seriously doubted. Indeed, it is at least open to argument that the removal of par value will decrease rather than increase the difficulty referred to. As long as par values remain, it is possible for promoters, simply by inflating the nominal capitalization, to conceal the fact that they have cut away a large slice of the stock. Investors are given one hundred dollars or more of stock for every hundred dollars that they contribute; they are quite unaware that they are paying partly for genuine stock and partly for water. Suppose, now, that the par values are removed. Is there not some reason to suppose that investors will be more rather than less critical of the disposition of the stock by promoters, now that the deceptive nominal values are not pres-

¹ This point has been called to my attention by a friendly critic, who writes as follows: "The dollar sign does afford some small protection to the investor as against the promoter who allots a disproportionate amount of shares to himself, or to others, for services rendered. It makes comparisons easier. If I pay \$100,000 for a thousand shares, the issuing of another thousand in exchange for property worth only \$50,000 is a rather more obvious discrimination than if I pay \$100,000 for, say, a one-thousandth interest in a company which gives a similar fractional interest for property of whatever value."

ent? At least, it seems reasonably clear that promoters will not find it easier to withdraw excessive profits when the par value is eliminated than when the par value was retained.

5. *That par values are necessary, or at least desirable, as a convenient device for accounting.* This view has been expressed by several authorities in accounting. William Morse Cole, for example, objects to the removal of par values on the ground that "it neglects a point most important for the accountant—namely, that some sort of capitalization is necessary for any scientific bookkeeping."¹ Unfortunately, Cole does not state the grounds for this opinion. Ripley, who takes a similar view, is more specific. After noting other objections to the use of stock without par value, he writes:

And what is of great importance for the future under the growing tendency to ascertain the physical valuation of the property, all standards by which to readily measure the reasonableness of the general scale of charges disappear. The scientific accountant must have some absolute basis for his bookkeeping. Without some such starting point the relation between a fair return upon the investment and a surplus arising either from issue of shares at a premium or inordinately high rates becomes difficult to state.²

Ripley's argument seems to be that without par value it is difficult to set up accurate accounts on the liabilities side of the balance sheet and to distinguish clearly between share capital on the one hand and surplus on the other. As a matter of fact, however, is not the situation quite the contrary? The distinction between capital and surplus is

¹ *Accounts, Their Construction and Interpretation*, rev. and enl. ed. (Boston, 1915), p. 207.

² *Railroads: Finance and Organization*, p. 94.

even more clearly and simply shown without the fiction of par values. In that case, the proper accounting procedure is simply this: Stock is credited to the Capital Stock Account, not at its face value, but at the price for which it has actually been sold.¹ Where the shares have a par value, a different rule of accounting applies. Here, stock is credited to the Capital Stock Account at par, regardless of the issuing price; any excess or deficit in the actual proceeds is carried to a Premium and Discount Account. Under the former procedure, the total contribution by stockholders is shown in a single account; under the latter, it can be arrived at only by a process of addition or subtraction.

The above points may be made clearer by an example. Suppose that a company has issued one thousand shares of stock at \$150 per share and suppose that the company has a surplus from reinvested earnings of \$50,000. Now if the stock has a par value of \$100 per share, the facts will be shown by the following entries in the accounts:

<i>Assets</i>		<i>Liabilities</i>	
Property	\$200,000	Capital Stock	\$100,000
		Stock Premium	50,000
		Surplus from Earnings	50,000
	<hr/>		<hr/>
	\$200,000		\$200,000

¹ Although the above accounting procedure seems to have been adopted by most corporations that have issued shares of stock without par value, it has not been universally adopted. For example, the Kennecott Copper Corporation enters its capital stock on the books at a valuation of five dollars per share in spite of the fact that much of its stock was issued at a price of fifty dollars per share. The reason for this retention by the Kennecott Corporation of a nominal value for book-keeping purposes is doubtless to be found in the peculiar provisions of the New York corporation law, discussed below, pp. 121-24. Still another method of accounting has been adopted by the Chicago Elevated Railways, a voluntary association. This company carries its participation shares (preferred and common) on the balance sheet at no valuation. It then sets up a single proprietorship account.

If, on the other hand, the stock is without par value, then the *same* facts will be shown on the balance sheet as follows:

<i>Assets</i>		<i>Liabilities</i>	
Property	\$200,000	Capital Stock	\$150,000
		Surplus	50,000
	<hr/>		<hr/>
	\$200,000		\$200,000

The second statement makes even more clear than the first the distinction between the original investment (Capital Stock) and the surplus. It does this by eliminating the stock premium (or discount) account. The removal of this account, so far from being a loss, is a great gain. Of what possible use is it to enter into a separate account an amount by which the proceeds of stock exceed or fall short of a fixed nominal sum (the par value)? Moreover, the presence of a stock premium has sometimes led to the payment of unearned dividends, because the premium has been treated like income from earnings, to be paid out in dividends instead of being kept intact as part of the corporate capital.¹

We conclude, then, that accounting has much to gain and little to lose by the removal of a necessarily fictitious par value.

¹Cf. Mead, *Corporation Finance* (1915), p. 206. It is true that some authorities have defended the practice of paying out premiums in dividends. Ignatius seems to think that this may be proper. He says: "... if the reason for the collection of premiums is that of equalizing the interests of the new stockholders with those of the old, should not the additional payment by the new stockholders be carried to the same account which registers the value-over-par interest of the old, to wit, the Corporate Surplus or Deficit account?" (*Financing of Public Service Corporations*, p. 75). But the objection to that practice is that shareholders may be deceived as to the actual earnings of the company; they may fail to see that the proceeds from premiums are an extraordinary source of profit and therefore not to be counted upon as a regular annual source of income. Receipts from premiums and receipts from earnings should therefore be kept quite distinct—the former being treated as an increase in *capital* and the other as *income*.

6. *That the removal of par value will open the way to the impairment of capital.* One of the evils against which corporation laws have attempted to guard is the impairment of capital by the payment of unearned dividends. Where the amount of capital is presumed to be determined by the par value of the stock, the law forbids the disbursement of this capital in the form of dividends. If, now, the par value is to be removed, it is thought that the distinction between capital and divisible surplus may be harder to maintain—that unscrupulous directors may be able to encroach upon the capital without fear of legal redress.

But if the new laws permitting the issue of shares without par value are drawn so as to make clear the distinction between capital and surplus, and if they provide a definite penalty against encroachment on capital, there is no reason to anticipate any more difficulty with the new kind of stock than with the old. Indeed, as has already been pointed out, the distinction between capital and surplus is even more easy to maintain when the par value is removed than when it is retained. All proceeds from the sale of stock are to be considered capital; all reinvested earnings are to be credited to surplus.

It must be admitted, however, that some of the present laws permitting the issuance of shares without par value are very defective at just this point. The New York statute, for instance, may be criticized here. According to this law, any corporation, in order to issue common stock without par value, must state in its certificate of incorporation the amount of capital with which the corporation will carry on business, which amount shall be not less than the amount of the preferred stock (if any) authorized to be issued with a preference as to principal, and in addition thereto a sum equivalent to five dollars or to some multiple of five dollars for every share authorized to be issued, other than

preferred stock; but in no event shall the amount of such capital be less than five hundred dollars.¹

The law further provides that

No such corporation shall declare any dividend which shall reduce the amount of its capital below the amount stated in the certificate as the amount of capital with which the corporation will carry on business.²

Now let us note the implications of these provisions. Instead of defining the capital of the corporation as the *entire amount* of the proceeds realized by the sale of stock, and instead of requiring that no part of these proceeds may be paid out in dividends, the law simply states a "minimum capital" of five dollars (or some multiple) per share of common stock, which must be on hand before the commencement of business, and which may not be disbursed in dividends. But suppose that a corporation states its minimum capital at five dollars per share in its certificate of incorporation, and then issues its stock at fifty dollars per share.³ Does the law regard that extra forty-five dollars per share as capital? And would the law prevent the distribution of those forty-five dollars per share as a cash dividend? Apparently not.

If this interpretation of the law is correct, it indicates a very serious defect. For the corporation is then free to treat a large part of the proceeds from the sale of stock either as surplus or as capital, whichever it desires. It is hardly necessary to point out the dangers of such a situation. Creditors who have relied on a fifty-dollar equity

¹L. 1912, ch. 351, sec. 19.

²*Ibid.*, sec. 20.

³That is precisely the case with the Kennecott Copper Corporation, which carries its common shares at a valuation of five dollars per share although a considerable portion of the stock was issued on the basis of fifty dollars per share. See p. 119, note 1, *supra*.

behind every share of common stock may awaken to the fact that all but five dollars per share has been distributed among stockholders; shareholders may suddenly learn that they have been receiving dividends, not out of income, but out of the very capital that they contributed.

So great is the danger from this defective law, that if it could not be removed, it would be enough to condemn the entire plan of issuing shares without par value. But as a matter of fact the trouble can easily be remedied. The defect of the New York law is that *it does not go far enough* in removing par values; it still retains par value to the extent that it fixes the stated capital at a certain amount per share. It is a compromise between the old principle and the new; and like so many compromises, it is worse than either of the two extremes.

Unfortunately, several other states have followed the example of New York in providing that the minimum capital which must not be impaired by dividends is to be a certain fixed sum per share. The laws of Maine and Ohio are in this respect almost identical with that of New York, while California has adopted a similar provision with respect to business corporations although not with respect to public utilities. In other states, however, a different principle prevails: the *entire proceeds* of the sale of stock are counted as constituting the capital. The laws of Pennsylvania¹ and Maryland² seem specifically to indicate this;

¹L. 1919, no. 363, sec. 3: "For the purposes of this act, the 'stated capital' of a corporation issuing shares without nominal or par value shall be the capital with which the corporation will begin business, as stated in the certificate of incorporation or reorganization . . . plus any net additions thereto, or minus any net deductions therefrom: Provided, That 'stated capital' shall not include any net profits or surplus earnings so long and during such period as the same may be paid out in the form of dividends under the provisions of section eight of this act . . ."

Ibid., sec. 8: "No corporation having shares without nominal or par

while in Delaware, Illinois,¹ and Virginia one is left to infer the same in the absence of provisions to the contrary.

*Limitations of the Measure as a Remedy for the Evils of
Stock Watering*

Although most of the objections urged against the use of shares without par value are unwarranted, many of the claims in its favor are equally unfounded. Frequently it has been advocated as in itself offering a cure for the evil of overcapitalization. Business men have favored it, not as a mere aid to the government in its control over public utility securities, but as an all-sufficient substitute for such control. Judge Lovett, for instance, in a statement before the Railroad Securities Commission, held that

the issuance of shares, as shares, without attributing to them a value, which of necessity varies and is more or less misleading, rationally solves all the problems about 'watered' stock,

value, issued under the provisions of this act, shall declare or pay any dividend out of capital or out of anything except net profits or surplus earnings."

²L. 1916, ch. 596, sec. 9: "For the purpose of any rule of law or of any statutory provision (except as in this section otherwise provided) relating to the amount of such stock issued, the amount of such stock issued shall be taken to be the amount of cash or the value of the services or property (determined by the board of directors as required by law) for which such stock has been issued."

¹The Illinois law, to be sure, requires that a company, in order to carry on business, must have a capital equal to at least five dollars per share of stock of no par value. There seems to be nothing in the law, however, to indicate that this five dollars is anything but the *minimum*—nothing, that is, to indicate that if a corporation issued its shares for more than five dollars per share, it would be permitted to pay out in dividends all except five dollars per share. To that extent, I take it, it differs from the New York law, which, by forbidding a corporation to pay any dividends that would reduce the capital *below* the minimum stated in its certificate of incorporation, would seem by implication to permit the disbursement in dividends of any sums received from the sale of stock *in excess* of the minimum five dollars.

and dispenses absolutely with the necessity for any legislation upon that subject.¹

Similar views were expressed by the Committee of the New York Bar Association.² Even Commissioner Erickson of Wisconsin seemed to think that this position might possibly be tenable.³

Other writers, however, have strongly denied this contention. Kuhn, who refers to the use of shares without face value in the 16th to 18th centuries, says:

Historical experience teaches that the aliquot shares attained values as fictitious as those often found at the present time, producing all of the evils attending overcapitalization.⁴

He therefore concludes that abolition of par value will accomplish no good and will do away with a convenient mathematical device. Ignatius, while not denying that the removal of par values may be useful in the case of private business corporations, warns against expecting too much from it. He says:

Removing the par value is not enough; standing by itself that change does not interpose any obstacle to the practices which have been the means of working overcapitalization heretofore. Take, for instance, the device of issuing shares in exchange for property or service accepted at an overvaluation; if the shares have a par value, the acceptor of the shares may reap a profit by reselling to those who will assume that the actual price paid for them upon issue equaled that paid for other shares of the same issue. If on the other hand the shares have no par value, the acceptor of the shares in exchange for property or services has precisely the same opportunity for

¹ *Statement before the Railroad Securities Commission, op. cit.*, p. 17.

² *Proceedings*, vol. xv (1892), p. 138.

³ *Regulation of Public Utilities: Three Discussions*, p. 62.

⁴ *A Comparative Study of the Law of Corporations*, p. 115.

profit by reselling to those who will likewise assume that those shares had been issued for consideration equaling that paid for other shares of that issue, since all shares of the one issue are required to be offered for sale upon like consideration.¹

It is not necessary to accept Kuhn's view of the uselessness of the proposal, or to admit Ignatius's doubt as to its advisability under commission regulation of securities, to see a large measure of truth in these remarks. After all, the abandonment of par value merely gets rid of one of the deceptive figures in corporation accounting. It does not substitute the correct data. A share, it indicates, is simply a fraction of a given total investment. But how large is this total investment? That remains to be shown. Nothing less than government supervision can insure a correct statement of the actual investment.

It cannot be too strongly emphasized that the use of shares without par value will not of itself remove the danger of stock inflation. This point has been already discussed in an earlier chapter.² How is it possible, one asks, to inflate shares without par value, when each share is now supposed to represent, not a definite amount of investment, but merely a certain *fractional interest* in the total property? The answer is that shares, even shares of no par value, will not be regarded by investors as representing mere fractional claims. People do not think in those terms. They think of a share as representing *an amount* not a *fraction*. That amount is determined in their minds largely by the market quotations and by the established dividend. If, then, the number of shares is doubled without any increase in earning power,—say, by the issue of a stock dividend of one hundred per cent,—investors will probably fail to see that each share now repre-

¹ *Financing of Public Service Corporations* (1918), pp. 81-82.

² P. 57, *supra*.

sents an earning power of only half its former amount. The market values of the new shares will therefore be inflated. By taking advantage of this failure of investors to discount the increase, unscrupulous financiers will be able to profit in the future, as they have profited in the past, by issuing shares in excessive amounts.

We conclude, then, that only when accompanied by more positive forms of regulation does the device of shares without par value promise much relief from the evils of overcapitalization. Its rôle is the modest though significant one of removing a fictitious statement in order to leave a clean sheet for the correct information. The more ambitious part claimed for it of solving in itself the problem of stock watering, it is wholly unfitted to play.

Proper Scope of Application—Should it include Preferred Stock?

If we accept the general principle of the proposal to issue shares without nominal value, two questions arise as to the proper extent of its application in railroad law. First, should it apply to preferred stocks as well as to common? Second, should it be compulsory or simply optional?

On the first point the present laws differ. Delaware, Ohio, and Virginia exclude all preferred stock from the provisions of their acts; New York and Maine exclude preferred stock with a preference as to principal; Maryland excludes stock preferred as to dividends and subject to redemption as well as stock preferred as to principal. Illinois, Pennsylvania and New Hampshire, on the other hand, make no restrictions as to the class of stock which may be issued without par value. California, in its law applying to industrial companies, follows the New York precedent by excluding stock preferred as to principal, but in the similar statute applying to public utilities, it provides that a com-

pany not only may but *must* issue all classes of stock without par value provided it issues any class without par.

At least two reasons may be given for retaining the par value on preferred shares, even when it is removed from the common. *First*, this distinction between the two classes of stocks conforms to a custom, not infrequently observed in corporation finance, of issuing bonds and preferred stock in amounts equal to the value of the tangible assets, and of issuing the common stock as a capitalization of intangible assets, such as "good-will" or "franchise value". By requiring this additional stock to be issued without nominal value, the law attempts to compromise between the exigencies that may be thought to require stock watering and the traditional principles that demand an equality between par value and assets. *Second*, the distinction is defended on the assumption that, when stocks are preferred not only as to dividend but also as to assets in the event of dissolution, the par value is necessary in order to define the amount of this prior claim.

The first point rests on a principle of capitalization that is neither practicable nor desirable. It is not practicable because the difficulties, already noted, of securing an equality between par values and assets would remain the same even though common stock were not to be counted as a part of the total capitalization. It is not desirable because the issue of bonds and preferred stock up to the amount of the actual investment would often exceed the limits of safety for these classes of securities.

The second argument has some force but is by no means a determining consideration. Even without the device of par values, stipulation can be made as to the claim of preferred shares in the event of dissolution. To be sure, the presence of a par value gives more publicity to the amount of the claim; but that point is of no great importance.

Although the positive objections to the removal of the par value from preferred stocks are not convincing, one must concede that the reasons in its favor have less force than with common stocks. For with the former class of security, the fixed rate of dividends prevents the nominal value from influencing appreciably the market valuation. If the dividend charges are kept within safe limits, investors are not liable to be misled seriously by fictitious par values. The great danger of deception is in connection with the common stock. On the whole, however, it is probably wiser to go the whole length by removing the par value from all classes of stock.

Should it be made Compulsory?

As proposed by the Railroad Securities Commission, and as provided in all the present state laws, the issuance of no-par shares is made entirely optional with the companies. Should this continue to be the case with respect to the federal railroads, or should the change be made compulsory for all of them?

The defense of a purely optional law is that the right to issue shares of no par value is offered as a means of avoiding the necessity of issuing stock below par. Corporations may be given their choice of two practices: They may either issue no-par stock at such prices as the market justifies, or else they may retain the par value, but subject to the strict requirement that all such stock must be issued at not less than par. If they choose the latter plan, they may then be held to rigid accountability for observing the statutory requirements as to the issuance price of the stock.

But while an optional provision may be conceded to be better than no provision at all, there can be little doubt that a compulsory measure will be much more satisfactory. The advantage to be gained by the more thoroughgoing measure

is the advantage of uniformity. If some railroad companies are permitted to issue no-par stock, while other companies retain the old form of shares, confusion will result. The success of the new system depends on the degree to which investors are educated to an appreciation of the fact that their shares represent, not a fixed amount of investment, but simply a right to a certain portion of the corporate income. This educational process will go on much faster if the removal of the par value is made general for all railroad corporations. Needless to say, it would go on still faster if it could be made universal for all corporations of every character. The latter goal, however, is not apt to be reached under the divergent laws of many states — not at least for many years. But the general adoption of the plan by all interstate railways may be secured under a law requiring federal incorporation.

Summary

The proposal to remove the par values from issues of stock is a recognition of the hopelessness of the attempt to maintain an equality between nominal capitalization and actual investment. Several objections have been urged against the plan, but they are based, for the most part, on a mistaken or exaggerated notion of the usefulness of par values.

On the other hand, the proponents of this plan have often claimed for it too much. They have asserted that its adoption would make all further measures of protection against stock manipulation unnecessary. This view cannot be sustained. The abolition of par value simply removes one source of misinformation. It does not remove all sources; still less does it provide the necessary valuation that must take the place of the nominal capitalization. These objects can be secured only by positive measures of financial control.

Nevertheless, the removal of par values is good as far as it goes. As applied to the railroads, the measure should be thoroughgoing; it should be compulsory rather than optional, and it should apply to stocks of all classes, common and preferred.

CHAPTER V

FEDERAL REGULATION OF RAILROAD SECURITIES

IN the preceding chapter, much emphasis was laid on the fact that the use of shares of stock without par value is not alone sufficient to meet the evils of overcapitalization, and that, in addition, there must be an effective control of security issues by the government. It remains, then, to consider in this final chapter some of the problems of government control.

Fortunately, one question that heretofore has occasioned much controversy has recently been settled: the question of state versus federal jurisdiction. Under the Transportation Act of 1920, the security issues of interstate carriers are brought under the exclusive control of the Interstate Commerce Commission. State commissions are deprived of all authority, except for their right to a hearing before the Interstate Commerce Commission in cases involving the interests of the states that they represent. So generally recognized is the wisdom of this change of jurisdiction, involving the centralization of power in the hands of one body, that we need take no time to recount the obvious advantages to be obtained.

Provisions of the Transportation Act With Respect to Control of Security Issues

Regulation of security issues is provided for in section 439 of the new Transportation Act (section 20a of the amended Interstate Commerce Act). In its general char-

acter, the measure is similar to those which have been in force for several years in the various states.¹ No carrier may issue securities without first making application to the commission and securing its consent. Exception is made of "notes to be issued by the carrier maturing not more than two years after the date thereof and aggregating (together with all other then outstanding notes of a maturity of two years or less) not more than 5 per centum of the par value of the securities of the carrier then outstanding."²

But the federal law gives the commission wider discretion in approving or disapproving an issue than do the laws of most states. With a few exceptions, the newer state laws enumerate certain definite purposes for which securities may properly be issued;³ the duties of the regulating commissions are more or less restricted to seeing that the proposed issues fall within the specified purposes.⁴ On the other hand, the federal statute makes no specification of purposes. It provides simply that the Interstate Commerce Commission shall approve a security issue when it finds that the issue

(a) is for some lawful object within its corporate purposes, and compatible with the public interest, which is necessary or appropriate for or consistent with the proper performance

¹The most complete analysis of the different state laws is by Barron: "State Regulation of the Securities of Railroads and Public Service Companies," *Annals, Amer. Acad. Polit. and Soc. Science*, vol. lxxvi (March, 1918), pp. 167-90.

²Interstate Commerce Act, sec. 20a (9).

³New York and other states enumerate five purposes: see pp. 78-80, *supra*.

⁴But on this point commissions differ greatly in their interpretation of their powers; some, like the Wisconsin commission, interpret their powers very narrowly, while others, like the two New York commissions, assume a wide discretion. Cf. Ignatius, *Financing of Public Service Corporations*, pp. 290-94.

by the carrier of service to the public as a common carrier, and which will not impair its ability to perform that service, and (b) is reasonably necessary and appropriate for such purpose.

Another clause goes even further in conferring discretionary powers by authorizing the commission to prescribe the terms of an issue:

The Commission shall have power by its order to grant or deny the application as made, or to grant it in part and deny it in part, or to grant it with such modifications and upon such terms and conditions as the Commission may deem necessary or appropriate in the premises, and may from time to time, for good cause shown, make such supplemental orders in the premises as it may deem necessary or appropriate, and may by any such supplemental order modify the provisions of any previous order as to the particular purposes, uses, and extent to which, or the conditions under which, any securities so theretofore authorized or the proceeds thereof may be applied, subject always to the requirements of the foregoing paragraph.

Nothing is said in the act as to the prices at which securities may be issued. There is no prohibition of the sale of stock below par or even of the issuance of a scrip or stock dividend. In only one case is a definite statutory limit placed upon the amount of securities that may be issued; namely, in consolidations. Here the law reads that "the bonds at par of the corporation which is to become the owner of the consolidated properties, together with the outstanding capital stock at par of such corporation, shall not exceed the value of the consolidated properties as determined by the Commission."¹ No similar provision is

¹Transportation Act, 1920, sec. 407, Interstate Commerce Act, sec. 5(6)(b).

made with respect to reorganizations, although such provisions are now commonly included in the state laws.

It is evident from the foregoing notes on the Transportation Act that Congress wished to place upon the Interstate Commerce Commission the burden of determining the principles of capitalization to which all railroads must henceforth conform. This is a heavy task. Fortunately, however, it is a task that has already been faced by the regulating commissions of more than twenty states; and their pioneer experience will serve to guide the action of the federal authorities.

Space does not permit of a discussion of all the principles that have been developed by state commissions in their control over security issues. Indeed, such a discussion has really been made unnecessary by the able studies of Barron, Bullock, Heilman, Ignatius, Ripley, and others.¹ The remainder of this chapter, therefore, will be confined to a study of three problems that seem particularly to warrant further consideration. The first topic is the control of the issuance price of shares of stock without par value; the second is the limitation of bonds and other evidences of indebtedness; the third is the treatment of security issues already outstanding.

(1) Control of the Issuance Price of Shares of Stock Without Par Value

Up to the present time, one of the chief objects of security regulation has been to prevent the practice of stock watering—that is, to prevent the issuance of shares for less than their full par value. Now, however, it is proposed to issue stock which has *no* par value. This raises a new problem. What is now to determine the prices at which shares may be is-

¹ See the references to these authors in the Bibliography at the end of this work.

sued? And should the government set a price limit, or should it leave this entirely to the discretion of the issuing company?

To these questions, many of the advocates of shares without par value would have a ready reply. They would insist that the removal of par values makes unnecessary any governmental control of the issuance price. This conclusion, they would say, follows from the very nature of the new kind of shares. Each share represents, not a fixed amount, but a fractional interest in the whole property. Hence, the determination of the number of shares to be issued, and of the issuance price, becomes merely a question of dividing the shares into such sizes as are most convenient to the investors. In this problem the government has no direct concern—no more than it has in the question whether or not a railway company should issue bonds in one-hundred-dollar denominations or simply in thousand-dollar denominations. In fact, the two problems are precisely the same in principle.

A similar line of reasoning would apply to the question of the propriety of a stock dividend. With par value removed, a stock dividend is supposed to mean nothing but the division of shares into smaller, more convenient claims. It does not necessarily indicate an increase in the value of the property, and therefore it need not be made contingent on such an increase.

Already, however, we have seen the weakness of this argument.¹ It assumes that the removal of par values will cause stockholders to think of their shares as representing nothing but fractional interests in the total earnings and assets of the company. But this assumption is not justified. Investors will continue to think of their shares as worth a certain relatively fixed *amount*, an amount determined in their

¹ Pp. 126-27, *supra*.

minds by the price that they paid for their holdings, by the dividend record, and by the recent market quotations. Under these circumstances, if the number of shares is increased without a corresponding increase in earning power, the investors will be influenced by their current notions as to the value of each share, and they will therefore not fully discount the reduction in the equity behind each share that is occasioned by the new issue. The result will be inflation of market values, a result which, as we saw in an earlier chapter, is responsible for most of the harm done by stock watering.¹

The danger to which we have referred, however, applies only to *increases* of stock issue and not to original issues made at the inception of an enterprise. In the latter case there is no *established* market value by which investors may be deluded. Here, then, it will be safe for the government to allow the corporation to set its own issuance price, subject, however, to the very important condition that stock must be offered on equal terms to everyone.²

But with subsequent issues of stock a different rule should prevail. The government should require that the shares be sold at their full market value, or not far below it. The object of this requirement is to prevent the increase in the number of shares from being disproportionate to the increase in the earning capacity of the property. In this way the danger of inflation to which we have referred will be removed.

This rule, that shares of stock of public service corporations must be sold at their market value, has been applied

¹ Chap. ii, pp. 50-57.

² This proviso is especially necessary with respect to payment of stock to promoters. The government must set a value upon the promoter's service and must see that the amount of stock going to the promoter does not exceed his just claims for services rendered.

by some governments even where the shares are given a par value. In England the principle has been widely accepted for local public utility companies, sale at auction being a customary requirement. According to trustworthy reports, the British experience has proved highly successful.¹ In America, a similar policy has been followed by Massachusetts.² Here, however, the plan has met with some difficulties. During a period of falling security prices it has been impossible to obtain a ready market for shares of stock when offered at public auction or when offered to stockholders at the prevailing market prices of the old shares. On that account, the Massachusetts law was modified in 1908 so as to permit railway companies to issue shares at a price to be determined by the stockholders but subject to approval by the Railroad Commission, which must see that the price is not "so low as to be inconsistent

¹Robert H. Whitten, *Regulation of Public Service Companies in Great Britain* (New York, 1914), ch. iii. In England the requirement that all shares of stock be sold at public auction is an integral part of the method of rate control to which local public utilities are subject. The British method, unlike the usual American method, is to base the rate of return directly on the securities rather than on the valuation of the entire property. Thus, a company may be allowed to charge rates sufficient to pay a ten-per-cent dividend on its outstanding stock. But in order to give the public the benefit of the very lowest possible rate of return on the invested capital, companies are required to sell their stocks (except the original issues) at the full market price. In this way, if a share of stock paying ten-per-cent dividends would sell for 200, the public would enjoy the use of capital at the rate of only five per cent. There is much to be said for this plan of rate regulation. Its adoption for our own railways has been advocated in a number of able articles by John Bauer; see, especially, "The Control of Return on Public Utility Investments," *Political Science Quarterly*, vol. xxxi (1916), pp. 260-88. See also Whitten, *op. cit.*, ch. xiv.

²See Ripley, *Railroads: Finance and Organization*, pp. 297-301; Charles J. Bullock, "Control of the Capitalization of Public Service Corporations in Massachusetts," *American Economic Association Publications*, series no. 3, vol. x (1909), pp. 384-414.

with the public interest." The commission has interpreted the above-quoted clause as requiring an issuance price "not materially lower than a price which would assure a ready market for the issue."

In view of the Massachusetts experience, it may be found advisable for the federal government to adopt a similar compromise measure permitting the issue of stock at a few points below the prevailing market prices of the old shares. Such a concession, while not ideal, would certainly create no serious danger of inflation.

If it seems wise to fix the issuance price of stock at not far below its market value, what shall we say of stock dividends? Of course, to permit stock dividends is just the reverse of requiring the sale of stock at its market value. Yet one cannot deny that a stock dividend may sometimes have a legitimate object. This object is to divide the stock into smaller shares when the value of each old share has become inconveniently large. Not only the stockholders but also the public may derive benefit from such a division; for the divided shares can be issued at higher relative prices, and consequently the cost of raising capital can be reduced. Where a case of this kind arises, permission to issue the stock dividend should probably be granted. The danger, of course, is that the increased number of shares will cause an inflation in values. But this danger can probably be minimized, although perhaps not entirely removed, by giving full publicity to the fact that the new stock does not represent any increase in actual capital.

(2) Restriction of Indebtedness

Several times in the course of this study the fact has been emphasized that overindebtedness is a menace to corporate credit of far more serious character than is an overissue of common stock. With respect to railways today, that re-

mark is especially in point. The increasing tendency of railway companies to finance their capital requirements by the sale of bonds or notes rather than by the issuance of stock has occasioned alarm among all persons familiar with the problem. To remedy this dangerous situation by bringing about a safer balance should be one of the chief aims of government control.

How, then, is this end to be attained? The first prerequisite is a more liberal policy of rate regulation. As a result of the higher operating costs, railroads, within recent years, have suffered so severe a fall in their net earnings that they have been unable to market their stocks; they have been forced to resort almost entirely to bond issues or to note issues.

But the allowance of increased rates, necessary as it is for the purpose in question, is not enough. It will help to give railways the *power* to keep their debts within safe limits, but it may not give them the *will* to do so. Adversity, in the past, has not been the only cause of overindebtedness; prosperity also has led to much the same result with certain railways. Some of the most reckless and fatal cases of overbonding have occurred during a period of prosperity, when speculative managements have capitalized the high earnings by inflating the funded debt as well as by watering the stock. In this way the controlling interests have been able to profit by trading on a narrower equity.¹ Two examples in recent railway history are

¹ Our American system of rate making has the unfortunate tendency to encourage this "trading on a narrow equity;" for it allows a given rate of return on the entire "fair value" of the property irrespective of the nature of the outstanding securities. For example, if the rate of return on the property value is fixed by the government at eight per cent, it will be to the interest of the stockholders to raise the largest possible amount of capital by the issuance of bonds bearing a rate of interest lower than eight per cent. The stockholders will gain the difference between the rate of interest on the bonds and the

Rock Island and Alton. In both of these instances the funded debt was increased, not to secure necessary funds for improvements, but simply to enrich the controlling stockholders.¹ These lessons of experience should not be forgotten. They prove conclusively that a mere return of "good times" will not guarantee a return of good credit; there must be safeguards against the abuse of prosperity. These safeguards must be secured by regulation.

Two very different problems are involved in the regulation of bond and note issues by the government. The one concerns the control of proposed new issues; the other concerns the treatment of issues already outstanding. In the present section we shall discuss simply the first question, leaving the matter of existing capitalization for later study.

In deciding upon a proper method of control, the federal government will naturally turn for precedents to the various states. A canvass of the states on this point discloses two divergent policies: The one policy is to set a definite statutory limit to the amount of debt that a railway company may incur; the other policy is to give to the regulating commission authority to fix such a limit as may be deemed appropriate in each individual case.

Most of the states that adopt the first policy set the limit at a certain ratio of bonds to stock, the proportion of bonds varying from two-thirds of the capital stock, as in Iowa, Nebraska, and Utah, to twice the stock, as in Delaware, Massachusetts, and Pennsylvania.² In many states the limit is fixed at equal portions of stocks and bonds, or of stocks and total indebtedness.

eight-per-cent return on the property. This defect of our system of rate regulation is not present in the English system, noted above (p. 138, note 1), by which the rate of return is fixed directly on the securities rather than on the valuation of the property as a whole.

¹ See pp. 55-56, *supra*.

² For the different state laws see Barron, *op. cit.*, pp. 176-78.

Among those states that do not fix a statutory limit, different practices prevail. The laws of several states grant to the regulating commissions specific authority to limit the proportion of bond issues. The statutes of Wisconsin and Indiana direct the commissions to fix a "reasonable proportion" of bonds to stocks, while the California law gives the Railroad Commission authority to permit bond issues equal to, in excess of, or below the amount of capital stock. In other states the laws make no reference to the restriction of indebtedness, but, nevertheless, the commissions of some of these states have interpreted their general authority to approve or disapprove security issues as giving them the power to restrict the ratio of bonds to stock.¹

Those commissions that assume discretionary authority have generally adopted the principle that bond issues should not be permitted to exceed such limits as will give reasonable assurance that interest and discount can be met out of current earnings.² Sometimes, in order to have some definite standard, commissions have fixed a proportion of bonds to stock, or of total debt to value of the property, which should ordinarily set the limit to the amount of borrowing.³

¹Such was formerly the position of the two public service commissions of New York State; but several recent court decisions have thrown doubt on their authority to limit bond issues, provided that these issues are for lawful purposes: See *Re Dry Dock, East B'way and Battery R. R. Co.*, 7 P. S. C. R. (1st Dist. N. Y.) 59 (1916), and *Re Hudson River & Eastern Traction Co.*, 3 P. S. C. R. (2nd Dist. N. Y.) 172 (1911). On the other hand, the New Jersey commission, under a law similar to that of New York, has been upheld by the court in its assumption of control over the relative amounts of bonds and stocks: 3 Ann. Rep. N. J. P. U. C. 16 (1912) and 4 *ibid.*, 3 (1913).

²See, for instance, N. J. P. U. C., Conference Order No. 7 and Conference Ruling No. 13, and Cal. R. C. Rep., year ending June '30, 1913, pp. 174-75.

³The California commission has fixed 80% of the property value as the usual limit (*op. cit.*, p. 175); the Indiana commission will not

But such rules are not rigidly followed; they are generally waived when a company is otherwise unable to raise necessary funds.

Of the two above-mentioned policies prevailing in different states which should be adopted by the federal government—the one which provides a definite statutory limit, or the one which gives full discretion to the regulating commission? Or is some compromise measure desirable? The present Transportation Act, to be sure, seems to accept the principle of giving discretionary powers to the Interstate Commerce Commission. But this act is only an experiment; if a change is desirable, it can be made.

Each of the two policies has its own merits, and also its own shortcomings. A statutory limit has the distinct advantage of setting something definite on which a railway management may base its financial plans and on which a commission may form its decisions. The benefit of a definite guide of this kind is not to be appraised too lightly. Railway managements know what to count on; they are able to make their financial arrangements with definite knowledge of the amounts which they must raise by the sale of stock or by the reinvestment of earnings. In other words, they do not need to speculate on the uncertain outcome of a commission ruling, and, therefore, they are not tempted to gamble upon the prospects of a lenient decision forced from the commission under the plea of dire necessity.

Not only the company but also the regulating commission is in a stronger position when it is acting under a definite statutory rule. In the absence of such a rule, its position at law is somewhat precarious. Even where the law follows the example of Wisconsin and Indiana by

allow the bonds to exceed the total investment, except possibly in emergency (P. U. R. 1918 E 311); the Maine commission sets the ratio of bonds to stock at two to one (P. U. R. 1917 B 898).

granting specific power to the public service commission to fix a "reasonable proportion" of bonds to stocks, it is uncertain to what extent the courts will uphold the commission in the use of its discretion. In their solicitude for the freedom of action of the private owners and in their caution against the delegation of legislative powers, the courts may possibly put serious limits on the authority of a commission to restrict bond issues. May they not hold that any increase in bonds must be permitted unless it is *clearly and convincingly* unreasonable? For example, would they uphold a commission if it should adopt the conservative policy of limiting bonded debt to half the value of the property? It is doubtful.

On the other hand, the principle of statutory limit has also its serious defects. Its very merit of definiteness is also its weakness. For it fails to take account of the peculiar circumstances that make each case properly a matter for separate consideration. For example, it makes no provision for emergency cases where companies lack the credit to sell stock and where they must issue more bonds or notes in order to raise necessary capital. Special treatment may be called for in such cases.

If the federal government were faced with the simple dilemma of choosing between a rigid statutory rule and the grant of full discretion to the Interstate Commerce Commission, it would probably do wisely to accept the second alternative. But is it necessary to adopt either extreme? Is there no compromise measure that will combine most of the merits of a rigid debt limit with the advantages of a flexible system? Probably there is. What is needed is a *normal* debt limit, to be set by statute, but subject to modification in cases of necessity. Such a measure would be analogous to the provisions of our present national banking law, which fixes a minimum ratio of cash reserves to

deposits, but which gives to the Federal Reserve Board the power to waive the reserve requirements in cases of emergency.

Without attempting to formulate the details of this compromise measure, let us consider the general features of such a plan. First, there must be a normal debt limit. We have already noted that many of the states set this limit at a certain ratio of stocks to bonds. But a more unsatisfactory standard could hardly be suggested. No prudent investor with the slightest knowledge of corporation finance would accept the ratio of outstanding bonds to stock as even a rough measure of the solvency of a corporation. Any number of circumstances may destroy the significance of such a measure: The stock may be watered, on the one hand, or may have been issued at a premium, on the other; the bonds may bear a high or a low rate of interest; the company may have heavy fixed charges not represented by the outstanding bond issues, such as interest on floating debt, rentals of equipment or of track, amortization charges; the net earnings may be unusually low, or unusually high, as compared with the investment.

Some other test, then, should be substituted for the above-mentioned one in fixing a proper debt limit. Probably the most satisfactory one is the proportion of fixed charges to net earnings. For example, the law might provide that railroads must not incur any debt, or assume any other obligations, which would raise their total fixed charges to more than a certain percentage of the average net earnings during the preceding five-year period. Such a standard would be far superior to the current one based on the ratio of bonds to stocks. While by no means perfect, it would at least afford a rough test of safety and that is all that can be expected of any hard and fast rule.¹

¹ Possibly a better limit than the above would be a certain ratio of

So much, then, for the statutory limit. But that limit should be subject to relaxation in cases of necessity. Just as the Federal Reserve Board may waive the reserve requirements of the federal reserve banks or of the member banks, so should the Interstate Commerce Commission have the power to make special concessions to railway companies with respect to their debt limits. Whether or not the law should attach certain penalties, conditions, and restrictions to the grant of such concessions, or whether that matter should be left entirely to the judgment and discretion of the Interstate Commerce Commission, is a problem of detail that need not be discussed here.

(3) Scaling Down of Existing Capitalization

Governmental regulation of railway finance labors under the very serious handicap that it has begun late in the game. It has come only after years of financial abuse; it takes effect when many railways are seriously overcapitalized and when the majority of railways are overindebted. Until this situation is remedied, until the weaker roads are compelled to readjust their outstanding obligations so as to make their capital charges commensurate with their earnings, it will avail little to attempt to regulate future security issues. One cannot build solidly except on a solid base.

What, then, is to be done at this late hour? Should there be a drastic and immediate scaling down of excessive capitalization, or should the readjustment be moderate and gradual? In either case, how is the end to be attained?

Fortunately, one of the problems that have hitherto caused much difficulty in financial reorganizations need give but little concern in the present instance; namely, the

total expenses (operating expenses, taxes, and fixed charges) to gross earnings. Cf. Lawrence Chamberlain, *The Principles of Bond Investment*, 3d ed. (New York, 1913), pp. 276-78.

problem of reducing the total capitalization of a company so as to make it correspond to the assets. That difficulty is disposed of by the conversion of all outstanding shares of stock into shares without par value. The removal of the par values will minimize the necessity of any reduction in the number of shares held by present stockholders.

But a far more difficult and important problem remains in the necessity of cutting down the fixed charges of overindebted railway companies. For it cannot be too frequently emphasized that overindebtedness, rather than overcapitalization in the ordinary sense of the term, is the incubus on American railways today.

If constitutional difficulties were not in the way, a strong case could be made for a federal statute requiring all overindebted companies to reorganize at once on a sound financial basis. Such a law would seem harsh to existing investors; yet it might be justified in the public interest. And even the investors might ultimately gain rather than lose; as they would be required merely to exchange bonds and notes for stock without yielding their right to whatever earnings the valuation of the property may entitle them to receive.

But we hardly need argue the merits and demerits of such a law; for it would almost certainly be held unconstitutional. There is, to be sure, a possibility that a reorganization of the kind mentioned might be upheld in court if it were made an incidental feature of an act requiring the consolidation of all interstate carriers into a few large companies under federal charter. But even that procedure would be of doubtful constitutionality.

These same constitutional difficulties have been met by the various state commissions in their attempts to regulate public utility securities. With two or three exceptions, therefore, the state commissions have not attempted to scale down capitalization already outstanding but have con-

fined themselves to the supervision of new security issues.¹ Gradually, it is hoped, this moderate policy will bring the companies to a healthy financial condition—in some cases through the reinvestment of earnings or the increment of property values, in other cases through bankruptcy, receivership, and reorganization.

Whatever one may think of the ultimate possibilities of this Fabian method, one must admit that it is woefully slow. As to a gradual readjustment through the investment of earnings, that is the very thing that a financially weak company cannot do. It has no surplus to invest. Only strong companies, like the Pennsylvania Railroad, can be counted on to turn back large earnings into their property. As to bankruptcy and reorganization, that may be deferred indefinitely. By skimping maintenance charges and by making no extensions and improvements, an overbonded company may keep up a miserable existence for years without becoming formally bankrupt. Meanwhile, of course, the public suffers from poor service.

Not all states, however, have been content to leave existing security issues alone. Massachusetts and Texas are notable exceptions. These states have adopted the policy of refusing to sanction new security issues whenever the proposed issue would bring the total capitalization out of proportion to the property values. Under this rule, an overcapitalized company is compelled to scale down its outstanding securities before it may make any further issues.

In the execution of this general policy, the methods of Massachusetts and of Texas differ materially. The practice of Massachusetts is determined by precedents set by

¹ See Heilman, "The Development by Commissions of the Principles of Public Utility Capitalization," *Journal of Political Economy*, vol. xxiii (1915), pp. 888-92; Ignatius, *Financing of Public Service Corporations*, pp. 294-96.

the regulating commissions; that of Texas is determined by statute. Consequently, the rule has been applied less rigidly in the former state than in the latter.

With what success have these efforts met? Are the results sufficiently satisfactory to warrant imitation by the federal government? Judging from the experience of Massachusetts, one might conclude that the experiment is successful, at least with respect to gas and electric companies. For Massachusetts is probably the only state in which the local public utilities are, for the most part, conservatively capitalized. Yet Massachusetts really furnishes no adequate test. In that state, regulation began before overcapitalization had become prevalent. Therefore, the problem of scaling down existing security issues has not been a serious one.

The case of Texas, however, is quite different. When Texas first undertook the regulation of railroad securities, overcapitalization had already been carried to absurd extremes. The famous Stock and Bond law of 1893 was a belated attempt to cure the evil. According to that law, railroad companies are forbidden to issue bonds in excess of the "reasonable value" of their property as determined by the Railroad Commission, except that in emergencies railroads may be allowed to issue stocks and bonds which, together, will not exceed the property value by more than fifty per cent.

Most writers agree that the results of this law of 1893 have not been satisfactory.¹ To be sure, the statute has led to a material reduction in capitalization; but it has also acted as a serious check to the raising of new capital.

¹ For discussions of security regulation in Texas see Ripley, *Railroads: Finance and Organization*, pp. 301-6, and articles listed in the Bibliography, *infra*, under the names, R. C. Duff, Lewis H. Haney, E. T. Miller, Charles S. Potts, *Railway and Engineering Review*, Edward P. Ripley, and R. A. Thompson.

Rather than submit to a reduction of their outstanding security issues, railway companies have simply avoided making new issues.

Recognition of the unfortunate tendency of the Stock and Bond law to check investment has caused the Texas legislature to modify the provisions considerably. It is now provided that a railway may issue new securities for extensions and for double-tracking, regardless of the amount of capitalization already outstanding. No doubt these modifications have helped to remove the check to the raising of new capital, but they have done so simply by a surrender of the very principle on which the original act was based.¹

It must be admitted, then, that the experience of Texas in its attempt to scale down redundant security issues is not such as to invite imitation by the federal government. But are we to conclude that the task of readjusting existing capital burdens is hopeless, and that the wiser course is to follow the precedent set by the other states in taking account only of *future* security issues? This conclusion does not follow. The fatal defect of the Texas plan is that it applies the pressure in the wrong place. The only punishment meted out to companies for failure to scale down excessive capitalization is refusal to permit them to issue further securities. But this is a punishment that hurts the public more than the company. What is needed is some form of governmental action that will induce financially weak companies to reorganize, but which will not give them the alternative of remaining unregenerate simply by declining to apply for permission to issue new securities. How is this end to be accomplished?

The means to this end are to be found in a wise exercise of the powers of government over railway rates and railway

¹ See pp. 92-93, *supra*.

service. These powers may be exercised in such a way as to compel or induce overbonded, miscapitalized companies to submit to reorganization. Compulsion may be used by a policy of severity toward the companies that fail to reorganize; persuasion, by a policy of liberality toward those companies that make the necessary capital readjustments.

There are numerous measures by which this policy of discrimination can be enforced. Rate control furnishes one possibility. It is a well recognized fact that the government enjoys a considerable latitude in its power to fix rates. The courts, to be sure, will protect a railway in its right to a "reasonable return on the fair value of the property." But the rate of return that the courts uphold as "reasonable" is the minimum rate—a rate usually considerably below that which is required in order to maintain the credit of the railway company. Suppose, now, that Congress were to fix a minimum rate, just high enough to satisfy the courts in their protection of property rights, which every railway is to be permitted to earn. Suppose further, that it sets a higher rate of return, which may be earned only by those railways that conform to certain standards of proper capitalization—standards based, perhaps, on the relation of fixed charges and preferred dividends to the valuation of the property. The application of this differential rate will hasten the reorganization of financially top-heavy railways, either through voluntary action on the part of security holders or through bankruptcy and foreclosure proceedings.

The use of the rate-making power may be supplemented by other forms of pressure. Service requirements may be enforced without leniency. Weak railways are frequently able to postpone bankruptcy only by allowing their service to deteriorate. If required to improve their service, to establish grade crossings, to replace worn-out rails, and to

purchase new equipment, they would be forced quickly into a receivership. Now the government, within limits, has the power to enforce reasonable service standards. Especially where the safety of the traveling public is at stake, its authority has been upheld in court. Let the government enforce these standards rigorously, and let the railways take the consequences if their financial structure makes it impossible for them to fulfill their obligations as public servants.

It must be admitted that the policy suggested above—the policy of forcing hopelessly overcapitalized railway companies to submit at the earliest possible moment to a thoroughgoing readjustment—breaks violently with the tendency of the past and with notions current at the present time. Hitherto, it seems generally to have been assumed that leniency rather than rigor is properly to be shown to financially weak railway companies. Instead of hastening a receivership and reorganization, the effort has been to avoid it. This has been notably the case with the New England railways; forbearance has marked the treatment of these mismanaged companies. Laws have been passed validating previous illegal acts and permitting new corporate action otherwise forbidden by statute. Everything has been done that could well be done to forestall the threatened bankruptcy.

This past practice of tempering the wind to the shorn lamb may or may not have been wise. Certainly bankruptcy and receivership are unfortunate occurrences, unfortunate both to the public and to the private investors. But one must admit that the situation today is unusual. We have come to a crisis in our railway affairs. Railway credit must be revived, and revived at once. At a time like this, stronger medicine is required than may have seemed necessary in the past. Measures that once might have seemed

too radical are now the only alternatives to the *more* radical step of government ownership and operation.

So far we have emphasized the wisdom of reversing the present policy of leniency toward miscapitalized railways. Equally essential, however, is the adoption of a liberal policy toward those companies that are willing to cooperate with the government in putting themselves on a sound financial footing. To state the case more concretely, the holders of junior bonds or notes in an overindebted railway should be induced to exchange their loans for shares of stock, not merely by the threat of loss in case the exchange is not made, but also by the prospect of a liberal return if the conversion is accepted.

After all, no policy of governmental control of securities can do much to restore railway credit unless it is accompanied by a policy of rate control that will make the stock holdings of *properly financed railways* an attractive form of investment. To that end, a dividend rate should be allowed that is sufficiently above the current yield of bonds to compensate for the extra risk. If the public is unwilling to grant that extra rate, if it begrudges more than a "savings-bank rate" of interest, it would better proceed without delay to adopt a program of government ownership; for under these conditions, private ownership is bound to fail.

Summary

The Transportation Act of 1920, in its provisions for federal control of railway securities, follows the main outlines of the more recent public utilities laws of the various states. It differs, however, from most of these laws in giving to the regulating commission the widest discretionary powers instead of making specific rules on which decisions must be based.

Among the many problems that will arise under the new

plan of financial regulation, three are of special importance: (1) the control of the issuance price of stock where the shares are without par value; (2) the restriction of indebtedness; (3) the treatment of security issues already outstanding.

The first problem raises the question whether or not the removal of the par value from shares of stock makes it unnecessary for the government to control the issuance price. To this question the proper answer seems to be that the price of an *initial* issue of shares may safely be left to the discretion of the directors, but that *subsequent* issues should be required to be sold at not far below the full market value. This latter requirement is for the purpose of preventing the speculative inflation that often results from the issuance of shares to stockholders at an unduly low price.

The second problem concerns the limit that should be placed on the power of a railway corporation to incur debts. On this point two distinct policies have prevailed in different states: The one policy is to fix a statutory limit, usually a certain ratio of bonds to stock; the other policy is to give the regulating commission authority to set such limits as it may deem appropriate to the particular circumstances. This chapter proposes a compromise. Let a definite *normal* debt limit be fixed by statute, but let the Interstate Commerce Commission have the authority to set aside this limit whenever circumstances require. The statutory limit, however, should not be the one now prevailing in the different states. Instead of setting a proportion of bonds to stock, the law should fix a normal ratio of fixed charges to net earnings. The latter ratio is much superior to the former as a test of the solvency of a railway corporation.

The third problem—treatment of existing security issues—is the most puzzling of all. Both constitutional and practical difficulties are present. Under ordinary circum-

stances, therefore, one might be inclined to leave outstanding securities alone. Indeed, most of the states have done just that. But railway credit, today, is in such a critical condition that a more radical policy is called for. There must be a speedy reorganization of grossly overbonded railways in order to leave a clean sheet for sound financial practices in the future. The government, therefore, should use all legitimate means in its power to hasten such reorganizations. This end may be accomplished by adopting a policy of severity toward recalcitrant companies and a policy of liberality toward those companies that conform to the standards of sound capitalization.

APPENDIX A

COURT AND COMMISSION DECISIONS ON THE RELATION OF CAPITALIZATION TO "FAIR VALUE"

THERE is no present occasion to cite at length the decisions on this subject, in view of the excellent digests that are already available.¹ It is sufficient to summarize the situation, and to present some points of interpretation which may not have been fully discussed elsewhere.

I. The Courts

In a legal discussion of the relation of capitalization to fair rates, the famous dictum in *Smyth v. Ames*² is the starting point. This dictum, which has already been quoted,³ mentions "the amount and market value of its stocks and bonds" as one of the elements to be considered in determining the "fair value" of a public service company. Does this mean that the amount of the securities must be considered, even if it is known to exceed the actual cost of the property? That question is answered in the *Smyth* decision as follows:⁴

If a railroad corporation has bonded its property for an amount that exceeds its fair value, or if its capitalization is

¹ Whitten, *Valuation of Public Service Corporation*, vol. i, Index s. v. "Capitalization," vol. ii, pp. 874-92; Beale & Wyman, *Railroad Rate Regulation*, 2nd ed., 1915, pp. 220-229.

² 169 U. S. 466 (1898).

³ Pp. 21-22, *supra*.

⁴ *Ibid.*, p. 544.

largely fictitious, it may not impose upon the public the burden of such increased rates as may be required for the purpose of realizing profits upon such excessive valuation or fictitious capitalization; and the apparent value of the property and franchises used by the corporation, as represented by its stocks, bonds, and obligations, is not alone to be considered when determining the rates that may be reasonably charged. . . .

It must be conceded that even this statement is not quite as clear-cut a disavowal of the right to earn a return on watered securities as might be desired: it still leaves the feeling that perhaps such securities are entitled to a *little* consideration, although not to very much. But the course of subsequent court decisions, including that of the Supreme Court itself in *Knoxville v. Knoxville Water Co.*,¹ leaves little doubt in the matter. In the *Knoxville* case the court said:

Counsel for the Company urge rather faintly, that the capitalization of the Company ought to have some influence in the case in determining the valuation of the property. It is a sufficient answer to this contention that the capitalization is shown to be considerably in excess of any valuation testified to by any witness, or which can be arrived at by any process of reasoning.

Other courts, both state and federal, have uniformly followed these precedents, denying the right to a return on excessive securities. Whitten, Beale, and Wyman cite numerous examples.

II. The State Public Service Commissions

The various state public utility commissions are almost unanimous in declaring that capitalization, when determined without governmental approval, shall not be made a

¹ 212 U. S. 1, 11 (1909).

basis of valuation. Only one partial exception has come to the writer's attention; namely, that of the Maryland Public Service Commission, which considers itself bound by a peculiar clause in the public service law of the state to protect "as far as possible" the value of the bonds issued prior to the act.¹ With respect to stock issues, the Maryland commission follows the practice of other states in assuming to disregard par values.

In order to conform to the letter of the *Smyth v. Ames* decision, which requires that the amount and market value of the stocks and bonds be considered, the customary procedure of the commissions has been to take evidence on the capitalization and on the return on securities. But if capitalization is found to be excessive, the statement is usually made that the commission has "considered" the amount of the stocks and bonds, and has determined that it should be disregarded, or given little weight, in fixing a rate.²

¹*Bachrach v. Consolidated Gas, Electric Light and Power Co. of Baltimore*, Ann. Rep. Md. P. S. C., 1913, p. 39.

²Whitten, vol. ii, p. 874-92, cites decisions of various public service commissions with respect to capitalization as a factor in "fair value." More recent cases are: *City of Lincoln v. Lincoln Water & Lt. Co.* (Ill. P. U. C.), P. U. R. 1917 B 1; *Re Richmond Lt., Heat & P. Co.* (Ind. P. S. C.), P. U. R. 1917 B 300; *Re Kansas City Elec. Lt. Co.* (Mo. P. S. C.), P. U. R. 1917 C 728; *Re Newton Gas & Elec. Co.* (N. J. P. U. C.), P. U. R. 1916 A 514; *Moretz v. Edison Elec. Illum. Co. of B'klyn.*, 7 P. S. C. R. (1st Dist. N. Y.) 175; *Ben Avon Borough v. Ohio Valley Water Co.* (Pa. P. S. C.), P. U. R. 1917 C 390; *Re Portland Ry., Lt. & P. Co.* (Ore. P. S. C.), P. U. R. 1918 B 266. In a review of the above-cited New York case, Dr. John Bauer, referring to the question whether capitalization should be considered in fixing a "fair value," remarks: "The point involved, so far as the writer knows, was never before so definitely set forth and argued by a company; and the commission's view may therefore serve as a leading and commendable precedent" (*American Economic Review*, vol. vii [1917], pp. 438-42).

III. *The Interstate Commerce Commission*

Of particular significance is the attitude of the Interstate Commerce Commission. One of the well-known rate decisions of this body is sometimes quoted as giving recognition to capitalization even when it is clearly shown to be fictitious. This was the Spokane case of 1909.¹ in which complainants against the railways made the plea that thirty million dollars of the capitalization of the Great Northern represented no investment in the property and hence should not be considered in determining a fair rate of return. To this contention, Commissioner Prouty, in the ruling decision, replied as follows:²

But we very much doubt whether in determining what rate of dividend the stock of a railway company may earn we can properly deduct in every instance watered stock. It is impossible to distinguish the spurious from the genuine. Those who received their stock without consideration have usually parted with it and that very stock, if it could be identified, is owned by its present possessor for a valuable consideration. The whole stock has gone upon the market, has assumed a market value, has become the subject of investment by innocent stockholders. We may undoubtedly and we should have in mind the manner in which this stock was issued and the consideration which was paid for it, but we do not think that we should, for example, treat the outstanding stock of the Great Northern as \$120,000,000 and not \$150,000,000. These transactions ought to have been prevented to begin with. Great sums might have been properly saved the public by suitable supervision at the outset, but the evil has been done, and for the most part cannot be safely undone. If this government in the past has permitted the "capitalization" of earnings and securities and the "conferring of benefits" it ought not to-day to penalize the innocent holders of the values thus created.

¹ 15 I. C. C. Rep. 376.

² *Ibid.*, p. 410.

The above quotation, however, is purely in the nature of a dictum, as the commission decided to require the reduction in rates without reference to this particular point at issue. The same question was discussed in the ruling opinion by Commissioner Prouty in the Eastern Rate Case of 1911.¹ Referring there to the *Smyth v. Ames* dictum that the amount and market value of the securities should be considered, Mr. Prouty remarked that, although counsel did not mention these matters, the commission regarded them as entitled to consideration. But in the further discussion of this point, he seems to indicate that it is *market* value rather than *par* value which may constitute a claim for protection. In this case, as in the Spokane cases, the question of capitalization had no effect on the actual decision; for it was held that in any event, no justification could be found for the proposed increase in rates.

These two opinions of Mr. Prouty, in so far as they may be interpreted as indicating a recognition of watered securities in the determination of a fair return, have found no acceptance in the later decisions of the commission. In the Western Rate Advance Case of 1911,² which was decided on the same date as the above-mentioned Eastern case, Commissioner Lane remarked in the ruling opinion that "this commission cannot accept capitalization as representing either investment or value." In *Railroad Commission of Texas v. Atcheson, Topeka, & Santa Fe Railway Co., et al.*,³ decided in the same year, Commissioner Harlan said,

The capitalized value per mile of road is not to be regarded, however, as having any significance in this controversy, nor do we attach any weight to the book value appearing on the accounts of the Company.

¹20 I. C. C. Rep. 243.

²20 I. C. C. Rep. 307, 320.

³20 I. C. C. Rep. 463, 474.

In an express rate decision of 1912,¹ Commissioner Lane made the following statement:

There is no sacredness in the stated amount of the capital stock of any company. When the courts speak of a return upon the capital of a public utility they mean a return upon the investment. The investor in a railroad, an express company, or a telegraph company should be compensated for the sacrifice that he has made and not paid a premium because of the manner in which he chooses to state his financial condition or his expectations.

In the more recent rate-advance cases, the commission's treatment of capitalization has been clear and consistent. The amounts of outstanding securities have been considered simply as *evidence* of the actual investment in the physical property. For instance, in the Five Per Cent Case of 1914, the commission based its conclusion that the returns were inadequate on the showing that the ratio of net operating income to book values had declined since 1900. The validity of the book values themselves, as indication of true value, was expressly denied. But it was believed that the comparative statements would give at least a rough indication of *relative* investments during the period in question.

The same use of capitalization as an indication of real values has been followed in the other cases, but always with the attempt to distinguish the fictitious from the genuine.³

¹ 24 I. C. C. Rep. 421.

² 31 I. C. C. Rep. 351, Reopened, 32 *Ibid.*, 325.

³ Western Rate Advance Case, 35 I. C. C. Rep. 497 (1915); Anthracite Coal Rate Case, 35 I. C. C. Rep. 220 (1915); Fifteen Per Cent Case, 45 I. C. C. Rep. 57 (1917).

APPENDIX B

PROTECTION OF CREDIT AS A FACTOR IN COMMISSION RATE DECISIONS

IN Chapter I the point was made that commissions sometimes allow more than a "fair" rate of return in order to bolster the credit of weak public service corporations. To the extent that this is true, overcapitalization may result in the allowance of excessive charges. We shall here consider, first, the position of the Interstate Commerce Commission and, second, the attitude of various state commissions. The courts may be left out of account, as they generally assume no authority beyond the guaranty of "fair" returns.

I. The Interstate Commerce Commission

In all the general rate-advance cases before this commission, the carriers have urged a declining railway credit as the chief reason for raising rates. As Commissioner Lane put it, in the Western Rate Advance decision of 1911,¹ the main contention of the carriers was that "we need the money." In so far as this need for higher rates in order to maintain credit may be due to unavoidably rising costs of capital, or to higher operating expenses, the commission has always recognized the plea as valid. But where the weakness of credit is attributable to overcapitalization, or to other causes for which the railways themselves are responsible, the argument has not been accepted so readily.

In the Eastern Rate Advance Case of 1911,² it was urged

¹20 I. C. C. Rep. 307.

²20 I. C. C. Rep. 243.

by the carriers that their rates were insufficient to maintain their credit. This fact was denied in the decision, but even if it were admitted, the commission did not consider itself at liberty to allow higher rates on that account. In the majority opinion, Commissioner Prouty remarked:¹

A fundamental economic fallacy underlies the proposition that we should permit rates otherwise unreasonable for the purpose of bolstering up the credit of our railways. It would be much better for the government to guarantee these bonds than to permit the people and the industries of this country to bear the burden of unreasonable transportation charges.

A similar view was expressed in the first decision on the Five Per Cent Case of 1914.² In this case the carriers held that rates were insufficient either to yield a "fair return" on the property or to attract capital. The commission stated that it was deluged with letters from all over the country pleading the need for higher rates in order to raise credit to stimulate business. But it held that, even if it had the will, it did not possess the power to raise rates for this purpose. As to the necessities of the weak railways, it said:³

No one could reasonably contend that the public should pay higher transportation rates because once prosperous properties—like the New Haven, the Chicago & Eastern Illinois, the Alton, and the Frisco, or the Cincinnati, Hamilton & Dayton—may now be in need of additional funds as a consequence of mismanagement.

The commission, however, did concede the need for increased revenues, although not on the grounds mentioned

¹ *Ibid.*, p. 253.

² 31 I. C. C. Rep. 351.

³ *Ibid.*, p. 358.

above. At the first hearings, the five-per-cent increase was permitted only within the Central Freight Association and not for the entire Official Classification Territory. But the case was later reopened,¹ and a more general increase was allowed on the ground that the earnings of recent months had declined. While the new decision makes no overt admission that the commission had changed its position with respect to the question of credit, Commissioner Clements, in his dissenting opinion, complained that in fact this plea of the carriers was heeded. After referring to the weight that the majority seemed to place on the book values, which were obviously untrustworthy, he said:²

If, now, to strengthen and maintain the credit of the carriers, regardless of the causes of its exhaustion or impairment, and without the application of the usual tests of reasonableness, these increases are justified, then, it seems to me that we are only at the beginning of what I fear will be a train of demoralizing results, disappointing and embarrassing to all concerned. It is by no means certain that it would not, in the long run, be cheaper to the public to guarantee the bonds of the weak roads unable to meet their obligations, rather than to try to take care of them by increased rates, which inure to the strong roads as well as to the weak.

This view of Mr. Clements, that the commission was influenced by the argument of the need to strengthen credit, seems to find support in the Fifteen Per Cent Case of 1917.³ It will be recalled that in this case the railways urged the existence of a dire emergency due to the war. Rising costs, it was claimed, were threatening earnings at the very time when the railways must go into the market for large funds in order to provide facilities required by the war. In its

¹ 32 I. C. C. Rep. 325 (1914).

² *Ibid.*, p. 340.

³ 45 I. C. C. Rep. 303.

decision, the commission admitted a need for higher earnings and allowed certain increases, although it did not find that any such emergency existed as would justify the immediate general increase desired by the carriers. Certainly, in this case, the main consideration was that of the expediency of the increase rather than the question of fairness to investors. It is of course quite possible that in this case the commission may have considered the two questions to be identical, or at least indistinguishable. But the fact that attention was directed primarily to need rather than to justice is significant. This position was taken even more unequivocally in the concurring opinion of Commissioner Harlan.¹

Up to the present, then, the position of the Interstate Commerce Commission with respect to credit requirements as a separate factor in rate making must be considered somewhat uncertain. *Formally* it is still on record as denying the claim; *practically* it seems recently to have given it recognition.²

II. State Public Service Commissions

The Massachusetts Public Service Commission has taken a position similar to that of the Interstate Commerce Commission, denying its own authority to sanction "unreasonable" rates in order to support railway credit. In its annual report for 1916 it made the following remarks under the heading, "the Question of Credit:"³

Beyond question the great need at the present time of most

¹ *Ibid.*, p. 326.

² The Transportation Act of 1920 provides that the Interstate Commerce Commission, in determining a "fair return" on the property value, "shall give due consideration, among other things, to the transportation needs of the country and the necessity (under honest, efficient and economical management of existing transportation facilities) of enlarging such facilities in order to provide the people of the United States with adequate transportation" (Sec. 422).

³ 4 Ann. Rep. Mass. P. S. C. xxv.

of the steam railroads and street railways operating within the Commonwealth is new capital. . . . In view of this situation, many have felt that the Commission, in dealing with questions of rates or service, ought to be guided chiefly by its concepts of what will do the most at the moment to promote the sale of the companies' securities.

While this feeling is not unnatural, it is the product of a one-sided point of view, and disregards the fact that the Commission exercises no arbitrary power nor unfettered discretion, but is the administrator of a definite code of laws by which its action must be governed. . . .

It is quite possible that in certain cases an increase in rates, though inherently unjust and unreasonable, may be expedient as the lesser of two evils, but this is a broad question of *policy*, which the legislature must decide in any given case, and which has not been left to the discretion of this Commission.

Not all commissions, however, have accepted this view of their duties in rate making. The Maryland Public Service Commission seems to have taken a different position in the case of *Bachrach v. Consolidated Gas, Electric Light & Power Co. of Baltimore*.¹ This company had been heavily overcapitalized as a result of consolidation; capitalization was \$43,518,088, of which \$29,358,000 consisted of bonds and other debt, while replacement cost depreciated was estimated at perhaps \$26,417,414, including five million dollars for value of easements. Referring to the question of a proper rate of return, the commission expressed itself as follows:

Whatever is done now must bear fruit in the future. The citizens of Baltimore are dependent upon the Defendant Company for two of the prime necessities of modern life, and its extension to meet the growing demand for its products is one

¹ Report for year 1913, p. 39.

of the conditions upon which the growth of the city and the multiplication and development of its industries depends. That the sins of over-capitalization impose a burden upon the people is undeniably true, and they cannot be too strongly condemned. But the burden would not be lightened, but made heavier, if conditions should be imposed upon the present management of the Company, which is not responsible for the things that we complain of, which would seriously impair its ability to meet the just demands of the community for service.¹

The rates which the commission finally fixed were estimated to be sufficient to yield a return of over \$500,000 after payment of interest charges. In arriving at this "reasonable return" the commission considered itself under obligation to protect the interest of the bonds pursuant to a peculiar statute of the state mentioned in Appendix A. But, in addition, it allowed an estimated surplus sufficient to pay preferred dividends and to leave a small balance, in order to support the company's credit.

The California Railroad Commission, according to the testimony of one of its former members, has sometimes been compelled to allow higher rates in order to support the credit of a weak company. In a report before the National Association of Railway Commissioners in 1913, the late Commissioner Eshleman of California made a statement to this effect and gave it as evidence of the need for security regulation.²

Since our entry into the war, the need to support the credit of public utilities has been more generally recognized by the various state commissions. Thus, the Indiana commission recently remarked that while a company must bear its part of the war burden, it must nevertheless be kept in a

¹ *Ibid.*, p. 54.

² *Proceedings of the Twenty-fifth Convention of the National Association of Railway Commissioners*, 1913, p. 195.

state of financial solvency.¹ The California commission said that "in determining the rate of return . . . careful consideration must be given, among other matters, to the ability of the utility to secure additional funds necessary for extensions, betterments, and improvements."² The New York Commission for the Second District³ permitted a company to earn rates sufficient for an extension of credit under the rules imposed by the War Finance Corporation. The commissions of Pennsylvania,⁴ Maine,⁵ and Oregon⁶ are on record as giving consideration to financial needs.

The New Jersey Commission⁷ has gone so far in its effort to support public utility credit as to allow the Public Service Electric Company to increase rates during the war so as to pay eight-per-cent dividends after all fixed charges, although no appraisal of the plant had been made. In its decision, it said:

We have not dealt with the value of the property in this proceeding. In the existing emergency, the determining consideration must be to keep the property in uninterrupted and effective operation. This involves the payment of fixed rental and charges without regard to the value of property, since failure to ratify such contractual rents and charges would jeopardize uninterrupted operation.

¹ *Re Fisher*, P. U. R. 1918 F 662.

² *Re San Joaquin Lt. & P. Corp.*, P. U. R. 1918 F 662.

³ *Re Empire Gas & Elec. Co.*, P. U. R. 1918 D 912.

⁴ *Re Springfield Consol. Water Co.*, P. U. R. 1918 E 358.

⁵ *Re Lewiston, Augusta & Waterville St. Ry.*, P. U. R. 1918 E 681.

⁶ *Littlepage v. Mosier Valley Teleg. Co.*, P. U. R. 1918 E 425.

⁷ *Re Public Service Electric Co.*, P. U. R. 1918 B 857.

APPENDIX C

THE ALTON CONTROVERSY

PERHAPS no other recent instance of stock watering has received so much attention, or has been the subject of such division of opinion, as the Alton recapitalization accomplished under the leadership of Mr. Harriman. Condemned by one writer as combining "practically all of the possible abuses or frauds" of railway finance,¹ it has been defended by another as a perfectly innocent and proper procedure,² while a third holds that "actual damage was done to the company's credit, but no harm was done, or could possibly have been done, to the travelling public."³ In 1907 the case was investigated by the Interstate Commerce Commission, which reported in terms of sharpest condemnation.⁴ More recently, the matter has again been brought to public attention by the controversy between Professor Ripley, who supports the Interstate Commerce Commission in its criticism, and Mr. George Kennan, who stoutly defends Mr. Harriman's acts as above reproach.⁵ The points

¹ Ripley, *Railroads: Finance and Organization*, p. 262.

² Kennan, see references below.

³ *Railway Age Gazette*, editorial comment, "'Cost of Service' and the Alton Case," vol. xlviii (1910), p. 222.

⁴ 12 I. C. C. Rep. 295 (1907).

⁵ Ripley, *op. cit.*, pp. 262-7; Kennan, "The Chicago and Alton Case: A Misunderstood Transaction," *North American Review*, vol. cciii (1916), pp. 35-54; Ripley, "Federal Financial Regulation," *ibid.*, pp. 538-52; Kennan, "Misrepresentation in Railroad Affairs," *ibid.*, pp. 871-82. Both of Mr. Kennan's articles have appeared, in revised and amplified form, in separate monographs bearing the above titles (The Country Life Press, Garden City, N. Y., 1916).

at issue in this controversy touch so closely upon the principles developed in the early chapters of this treatise, that it will be worth while to review them in detail. First, however, let us note briefly the conceded facts of the case.

The Facts of the Case

At the end of the last century, the Alton was a conservatively capitalized railway with a low indebtedness, making excellent earnings and paying from seven to eight per cent dividends. But its management under President Blackstone was not sufficiently progressive. It had failed to keep pace with the modern development of transportation facilities and had not even provided adequate allowances for maintenance and depreciation. This fact, together with a reduction in freight rates under increasingly keen competition, had been responsible for a decline in net earnings during the 90's, with a consequent reduction in dividends from 8 per cent to $7\frac{1}{2}$ per cent and then to 7 per cent.

In 1899, Mr. Harriman and his associates secured control through the purchase of nearly all the common and preferred stocks at 175 and 200, respectively. Their announced policy was to make such improvements as would put the road in first-class condition, and to develop the line as a connecting link in the larger Harriman system. To a measurable extent, both of these policies were carried out. But the financial transactions involved in the program for development were made the occasion for an increase in capitalization far beyond the amount required in order to secure the necessary funds. This inflation was accomplished by the following series of steps.

First Step, 1899. Sale of thirty-two million dollars, face value, of three-per-cent bonds to stockholders—the syndicate—at sixty-five. These bonds were later resold by the syndicate at a very material profit. The average price ob-

tained has never been made public, although the Interstate Commerce Commission reported that ten million dollars of the bonds were bought at ninety-six by New York life-insurance companies. According to an estimate of the commission, the average price was ninety, which would give a profit of eight millions; but this figure has been challenged by Mr. Harriman's protagonists.

Second step, 1900. Payment of a thirty-per-cent extra cash dividend on both classes of stock, amounting to \$6,669,000. The funds for the dividend were secured from the proceeds of the above-mentioned bond issue. This left only \$13,410,000 from the issue of thirty-two millions of bonds available for refunding and improvements.

In order to prevent the resulting excess of nineteen millions in capital liabilities from creating a deficit on the balance sheet, the assets of the company were written up by \$12,444,177.66, with a corresponding credit to "Construction Expenditures Uncapitalized." Against the latter account were charged the thirty-five-per-cent discount on the bonds and the cash dividend. This left a debit balance which was transferred to Profit and Loss. The syndicate justified this procedure on the ground that a surplus of over twelve millions had been accumulated by the reinvestment of earnings, but that this surplus had not, heretofore, appeared on the books, owing to the practice of charging improvements to Operation instead of to Capital. Under that interpretation, the bonds that were issued in excess of the additions to property would amount simply to a capitalization of the surplus.

Third step, 1900. Formation of the Chicago and Alton Railway, as a holding company to take over the stock of the operating railroad. The reason given by the syndicate for the formation of this new company was that the charter of the old company would not permit the merger of some newly

acquired lines. Exchange of securities was made on the following terms: For \$3,472,200 par value of the old preferred, the holding company paid ten million dollars in cash; for \$18,322,400 par value of the old common, the holding company issued \$19,489,000 of its own preferred stock and \$19,542,800 common stock.

In order to raise the ten millions of cash in payment for the preferred stock of the railroad, and also to secure an additional three millions for the purchase of a branch line owned by the Harriman syndicate, the railway company sold to its stockholders (composed almost entirely of the members of the syndicate) twenty-two million dollars, face value, of 3½-per-cent collateral trust bonds, at 60, netting the company about thirteen million dollars. As in the case of the earlier bond issue, these securities were issued much below the market price, which ranged from 78 to 86½ for two or three years after the issue. Another source of profit to the stockholders was thus tapped.

Fourth and last step, 1906. The holding company and the operating company were consolidated to form the new Chicago and Alton Railroad. In this case there was no material increase of capitalization, the exchange of stocks being on the basis of par for par, except for the issuance of \$879,300 "prior lien and participating" stock to take up the small outside holdings of the original railroad stocks on the basis of three new shares to one of old preferred, and two to one of common. This step has not been the subject of special criticism.

The total effect of these various financial transactions may be seen in the following table, which compares the liabilities of the old railroad in 1898 with those of the consolidated company in 1906.

<i>Liabilities</i>	<i>Year 1898</i>	<i>Year 1906</i>	<i>Increase</i>	<i>Per cent Inc.</i>
Common Stock	\$18,751,100	\$19,542,800	\$ 791,700	4
Pfd. & Prior L. Stocks ..	3,479,500	20,423,300	16,943,800	480
Total Share Capital ...	\$22,230,600	\$39,966,100	\$17,735,500	80%
Funded Debt Outstdg. ..	8,650,850	64,350,000	55,699,150	644
Guaranteed Stocks	2,129,000	3,693,200	1,564,200	73
Other Liabilities	940,957	5,865,056	4,924,099	525
Total Indebtedness	\$11,720,807	\$73,908,256	\$62,187,449	530%
Total Liabilities	\$33,951,407	\$113,874,356	\$79,922,949	235%

Against this increase in total capitalization of about eighty million dollars was an additional investment in the property, according to the company's own books, of only eighteen million dollars.

Changes in Control of the Railway

Since the time of this financial reorganization, there has been frequent shift in the controlling interests of the railroad. In 1904, the company came under the joint control of the Union Pacific and the Rock Island railroads, the former having purchased a majority of the Alton preferred stock, and the latter owning some of the preferred and nearly all of the common.¹ This arrangement lasted only until 1907, when the "Clover Leaf" (Toledo, St. Louis & Western Railway), a Hawley property, secured control through the purchase of the Rock Island's interest. The Union Pacific still retained, and continues to retain, its holdings of about ten million dollars of the preferred, but it did not remain in

¹ The Interstate Commerce Commission states that the Rock Island, between 1903 and 1907, purchased \$4,880,000 of the preferred and \$14,420,000 of the common at a total cost of \$9,709,876.49. In 1907 it sold all of this common and \$4,100,000 of the preferred to the "Clover Leaf" line in exchange for \$4,110,000 series "A" bonds of the latter road (for the preferred stock) and \$5,047,000 series "B" bonds (for the common stock). 36 I. C. C. Rep. 43 (1915).

control after 1907; so that Mr. Harriman's connections were severed at that time. More recently, since both the Alton and the Clover Leaf roads have got into financial difficulties, the Union Pacific interests have again assumed direction.

Rise and Fall of the Income

So much for the financial circumstances and the changes in control. Now for the effects on the well-being of the railroad. Under the Harriman management, the physical condition of the road was materially improved. Gross earnings per mile increased 56 per cent from 1899 to 1907; net earnings per mile increased 55 per cent. This rise took place in spite of material reductions in rates. In 1907, the income after payment of the heavy fixed charges was sufficient to pay the 4-per-cent preferred dividend, with a surplus of about 5 per cent on the common stock. When Mr. Harriman severed his connections with the road, in that same year, he seemed to have left it in a condition of prosperity. Current issues of railway and financial journals, commenting on the remarkable growth of traffic, cited the case as another instance of the effects of Mr. Harriman's golden touch.

But beginning with the year 1908, the Alton record has been almost steadily downward. To be sure, gross earnings have continued to increase with the exception of a few off-years. Net earnings per mile, however, reached a limit in 1909 which was never exceeded or even again attained until 1917, under the extraordinary war conditions. At the same time that income was falling off, fixed charges were steadily rising. In 1912, there was a deficit after payment of interest, and this has continued during every subsequent year. Were it not for the financial support of the Union Pacific, which has advanced the necessary funds, the Alton would in all probability have become a bankrupt road.

Professor Ripley's Criticisms

Professor Ripley places the responsibility for the recent misfortunes of the Alton squarely upon the Harriman reorganization. By that act, he says, the road was overloaded with a burden of fixed charges in excess of earnings. As a result, it has been unable to secure money for necessary improvements, its service has deteriorated, and it faces the "need of high rates for service in order to support the fraudulent capitalization."

Mr. Ripley lays great emphasis on the alleged attempt on the part of the promoters to conceal the fictitious nature of the increased capitalization by devious accounting methods—by writing up the assets and charging the 30-per-cent cash dividend and the bond discount to the resulting surplus, and by using the holding-company device in order to conceal the financial position of the operating company.

Mr. Kennan's Reply

In his reply, Mr. Kennan admits the facts of the fictitious increase in capitalization, but insists that the transactions were entirely legitimate, that they were not concealed, and that they resulted in no injury to the company. The chief points in his attack on Mr. Ripley's argument may be stated and examined in turn.

1. That the syndicate did not make exorbitant profits. Professor Ripley's estimate of \$23,600,000 profits is grossly exaggerated. While it is impossible to tell the exact amount of the gain, the prices at which the syndicate sold their securities would give them "a net profit of probably eight per cent and possibly twelve or fifteen per cent upon the cash outlay." (p. 41)¹

Ans. The estimate of profits is wholly speculative. The actual figures have never been divulged, and the quoted

¹ Page references are to *North American Review*, vol. cccii (1916).

market prices of some of the securities in question are only nominal. To be on the safe side, Mr. Kennan's estimate is not challenged.

2. That the creation of the surplus was entirely legal and proper. Legal authority supports the right of companies to charge to capital bona-fide improvements that have previously been charged to operating expenses. (pp. 43-4).

Ans. In a revised edition of his article, Mr. Kennan himself admits by implication that the surplus was not justified. He there says:

The only reasonable objections to such a course are stated, very fairly, by Professor Mead and President Fink. The former is of opinion that capitalization of sums previously spent for betterments is justifiable only when the betterments have actually increased earnings, which in the Chicago and Alton case they had not done. "Its earnings for many years," Professor Mead says, "had been stationary, and its property had not been kept up to standard." If the company had maintained a proper depreciation account, there would have been no such surplus. For these reasons he disapproves of the capitalization of past betterments and the issue of bonds to pay a dividend thereon; but he admits that, in the absence of state legislation expressly forbidding it, "the legality of the proceeding is not to be questioned." This judgment, however, does not change the facts that the money was expended, and the cost might properly have been charged, at the time, to capital account. The proceeding involves a question of financial expediency, but not, in any sense, of illegality.¹

In the present discussion, the question of legality is of little concern: we are here studying the principles, not the existing laws, of capitalization. But it may be noted in passing that even the legality may be questioned if it is true, as the above quotation indicates, that "if the company had

¹ *The Chicago and Alton Case* (Garden City, N. Y., 1916), pp. 23-4.

maintained a proper depreciation account, there would have been no such surplus." Much more important, however, is the undeniable fact that the procedure was financially inexpedient and therefore contrary to public policy.

3. That the payment of the thirty-per-cent cash dividend and the sale of bonds to reimburse the treasury for the payment were legal and proper. They amounted simply to the capitalization of the above-mentioned surplus. (pp. 43-4).

Ans. Assuming the validity of the surplus,—a very questionable assumption,—the issuance of bonds against it was probably legal under the state laws as they then stood. But that it was in violation of the public interest is entirely clear. Any increase in debt weakens the corporate credit by reducing the margin of safety. It is therefore justified only as a means of securing capital that cannot be secured on equally good terms by the sale of stock. In the case at hand no such necessity prevailed, for no capital whatever was raised. The same remark applies to the issuance of bonds by the holding company in place of the preferred stock of the operating company. The added burden of fixed charges brought no compensating advantage to the railway. From the public standpoint it was therefore unjustifiable.

During recent years, railway officials have constantly urged the necessity of higher earnings in order to enable the roads to secure capital by the sale of stock instead of bonds. What, then, shall we say of a railroad that makes its very prosperity the excuse for assuming heavy and wholly unnecessary increases in bonded debt?

4. That the sale of bonds at 65 was reasonable under the circumstances. While it is true that the Harriman syndicate made a large profit by reselling at a higher price, the excessive amount of the profit could not have been anticipated. It was due partly to the passage of a New York

law making the bonds a legal investment for savings banks, and partly to the unexpectedly favorable conditions of the market. A few years later, in 1907, the prices of these bonds had fallen almost to the issuance price, although they were "just as good then as they ever had been." (pp. 44-6).

Ans. This argument might have more weight were it not for the fact that the syndicate repeated the trick soon afterwards by causing the holding company to issue its 3½-per-cent collateral trust bonds at 60. The market prices of these bonds ranged from 78 to 86½ for two or three years after the issue.

5. The alleged overcapitalization. Those who make that charge do so on the assumption that capitalization should represent the actual cost. But there is good authority for the position that capitalization should be based, not on cost, but on earning power. The latter is the more defensible standard. (p. 46¹).

Ans. The earning-power basis is discussed at length in Chapter III of this study.² It rests on the false notion that capitalization should represent value, but it cannot be sustained even on that theory, except in so far as it happens to coincide with market value. The extended defense of the principle presented in Mr. Kennan's revised edition³ illustrates both of these fallacies: First, it assumes that capitalization should be based on value and hence that the only question is to find out what that value is; second, it assumes that a fair measure of value is the probable earnings *capitalized at hypothetical rates of interest*. In defense of this latter view, Mr. Kennan makes the following quotation from a well-known economist:

¹ More fully developed in the revised article printed in monograph form: *The Chicago and Alton Case*, pp. 28-32.

² *Supra*, pp. 82-88.

³ *Op. cit.*

As an investment, land is valued, as is any other form of income-producing property, by capitalizing its annual return at the current rate of interest.¹

Now this assertion is perfectly sound; but one notes that the author was careful to state that the capitalization is "at the *current* rate of interest"—current, that is, for similar investments at that particular time. Mr. Kennan, however, in his computation of earning power, uses rates very different from the current ones. He calculates on the basis of the 3 and 3½-per-cent nominal rate of interest on the bonds, the 4-per-cent dividend on the preferred stock, and a four-per-cent rate on the common.² No one of these rates was as high as the market rate; that is to say, every one of these securities was selling well below par. Therefore, one cannot accept a capitalization based on those rates as representing in any way "the value of the property."³

6. That, accepting earning power as the proper standard, the Alton capitalization was not excessive. Mr. Harriman estimated that, as a result of certain improvements of the physical property, net earnings would rise to four million dollars per year, sufficient to pay interest on the bonds and dividends on both classes of stock. The actual results more than justified this estimate. In 1907, net earnings were

¹ H. R. Seager, *Principles of Economics* (New York, 1913), p. 239.

² *Op. cit.*, p. 34.

³ If the present discussion were an attempt to determine whether, and to what extent, Mr. Harriman and his associates were guilty of a breach of business ethics, it would be necessary to add to the above criticism this statement: that in spite of the scientific absurdity of the earning-power theory of capitalization, it is a principle that has been accepted by many persons of high standing and honorable reputation. The real defense would therefore be, not that Mr. Harriman's methods were valid, but that they conformed to the standards of the time. But the matter of personal blame does not concern the present discussion.

\$4,415,974—enough to cover all prior charges plus five per cent on the common stock (pp. 47-8).

Ans. Even on the basis of earning power, the capitalization was excessive. The apparent large earnings during the last year of the Harriman control were not a fair test. This point is discussed in the section following.

7. That the later misfortunes of the Alton road were in no sense caused by Mr. Harriman's management; for they did not take place until Mr. Harriman had left control. They were due to a number of circumstances—to poor business conditions, to the unexpected rise in operating expenses, to the decline in rates, and to the inefficient financial management by the "Clover Leaf" interests. "Mr. Harriman left the road on a dividend paying basis in 1907 and two years later he died." (pp. 49, 873).

Ans. It is true that the trouble *did not appear* until after Mr. Harriman's withdrawal from control. But that does not absolve his syndicate from responsibility. Anyone who will consult the successive operating reports of the railway during the period in question will note that the factors in the railway's financial misfortunes are two: first, an extraordinary upward trend in the fixed charges from the beginning of the Harriman administration down to the present time; second, a decline in net earnings after 1909. Either of these two trends alone would have meant an injury to the railway credit; but the serious condition—the failure to earn interest charges—was due to the combination of the two.

The changes in earnings and fixed charges may be noted in the table below, which gives the figures on a per-mile basis.

CHICAGO & ALTON RAILROAD. INCOME AND CHARGES PER MILE OF LINE
OPERATED, BY THREE YEAR AVERAGES ¹

	1897-9 <i>Blackstone</i> Period	1905-7 <i>Harriman</i> Period	1912-14 <i>Clover Leaf</i> Period
Gross Oper. Revenue	\$8,266	\$12,680	\$14,246
Maintenance	1,506	3,035	5,219
Other Expenses & Taxes	3,750	5,529	6,898
Oper. Expenses & Taxes	5,256	8,564	12,117
Net Earnings	3,010	4,116	2,129
Other Income	296	45	85
Total Net Income	3,306	4,161	2,214
Fixed Charges	1,267	2,603	3,816
Dividends	1,865	847	0
Surplus	174	711	* 1,602
* Deficit			
Mileage	844	915-970-970	1026-1026-1033

¹ The figures for the three different periods are not strictly comparable owing to changes in the accounting methods; but for practical purposes the discrepancies are not serious. Prior to 1899, the company deducted certain expenses before stating the gross operating revenues; but in 1899 and thereafter these charges were added to operating expenses instead of being deducted before stating the gross. In its operating report for 1899, the company computed the 1898 earnings on the new basis as well as on the old. I have therefore used the new basis for 1898 and have also estimated the 1897 earnings on the new basis, by adding to the reported gross earnings and to the operating expenses the amount (\$460,970) by which the 1898 earnings as computed by the new method exceeded the earnings as computed by the old method. By the same method, I have estimated the maintenance charges for 1897 at \$90,408 in excess of the reported figure.

"Fixed charges" include interest on debt, discount charges, dividends on guaranteed securities, rentals of leased lines.

For the first period, the figures have been computed from the annual reports of the company; for the two later periods, they have been taken from *Moody's Analyses of Railroad Investments*, with a modification by which taxes are included in operating expenses rather than in fixed charges.

(a) The increase in fixed charges. For this extraordinary increase the Harriman reorganization is admittedly in large measure responsible. Even the rise that took place after 1907 must be attributed in part to this circumstance; for the recapitalization placed such a burden of debt upon the company that it was unable to secure the necessary funds except by borrowing on unfavorable terms.

(b) The decline in the net earnings. This was due chiefly to the increased operating expenses. Other factors mentioned by Mr. Kennan were also in part responsible.

But is it really true, as Mr. Kennan suggests, that when Mr. Harriman left the road, the earnings were sufficient to justify the inflated capitalization? According to the operating statement, they were indeed sufficient to pay four or five per cent on the common stock. But aside from the fact that the two years which gave this favorable showing were unusually good years for the road (1905 the St. Louis Fair, 1907 the high business prosperity), one may question whether the amount of the net earnings was not deceptive. For the experience of later years shows that during the Harriman period, maintenance charges were inadequate. Let us look further into the matter.

The reader will note from the above table that the chief reason for the decline in net earnings during the "Clover Leaf" period has been the extraordinary rise in maintenance charges. During the first three years of its control, the new management had allowed the charges to drop off; but beginning with 1911 it raised them above any previous amounts. Under the Harriman control, the average maintenance charges per mile, from 1900 to 1907, were \$2,595; under the Clover Leaf, the average from 1908 to 1917 was \$4,422, an increase of \$1,827 or seventy per cent. This rise is all the more extraordinary in view of the fact that even in the Harriman period, maintenance charges had

risen to over twice the figure under the Blackstone administration. In 1899, for example, the maintenance charges were only \$1,481 as compared with \$3,120 in 1907.

It is evident from these facts that the Alton railway was left by the Blackstone administration in a much worse physical condition than was at first supposed. Even the increased maintenance during the Harriman period did not suffice to make good the deferred charges of prior years. This view is confirmed in the annual report of the President for 1913, which states that the property was still in poor physical condition as a result of the previous insufficient provisions for upkeep.¹

We are compelled, therefore, to conclude that, if the Alton earnings during the last years of Mr. Harriman's control had been made to bear their fair share of the maintenance charges, they would not have yielded the amounts required to support the high capitalization.² When, in addition, one recalls that no attempt was made to amortize the heavy bond discounts, and that consequently this burden has been deferred to the time when the bonds mature, it is evident that the apparent prosperity of the Alton in 1907 was an illusion.

8. That the transactions, so far from being concealed, were given complete publicity. They were without exception announced in the current financial publications. Therefore, by no chance could investors have been deceived. (pp. 51-2; 877-9).

Ans. It is probably true that Mr. Harriman met all *formal* requirements of publicity. Each step in the reorganization was published at the time. The Interstate Commerce report, on which Mr. Ripley based his statement to the con-

¹ *Report*, p. 6.

² This statement is not meant to imply that Mr. Harriman designedly skimmed the maintenance charges in order to conceal the true condition. It is quite possible that the inadequacy of the charges did not become apparent until later.

trary, did an injustice to Mr. Harriman by failing to make this fact clear.

But it is also necessary to remark that the public notices of the transactions, though they may have conformed to the customary requirements, were wholly insufficient to protect investors against the deceptive appearances of the transactions. The various steps in the financing were so complicated, and the accounting methods so involved, that the successive public announcements were sure to confuse the ordinary investor. Take, for example, the procedure of setting up a surplus against which to charge the discount on the bonds and the extra cash dividend. It is true that an experienced analyst or accountant, by comparing the balance sheets and earnings statements for succeeding years, and by consulting the notices of the financial transactions in the current financial journals, could arrive at the true position of the assets and liabilities. But most investors are not experienced in analysing reports and cannot take the time to make critical examinations. These people would almost surely be deceived by the appearance of a great increase in the investment.

9. That Professor Ripley's accusation that Mr. Harriman prejudiced the interests of shippers "by creating the need for high rates for service in order to support the fraudulent capitalization" is doubly misleading: It indicates, first, that rates are dependent on capitalization, and second, that Mr. Harriman raised rates to bolster up fictitious securities. The former is an economic fallacy; the latter is simply a misstatement of facts, for rates actually declined after the reorganization.

Ans. (a) The relation of capitalization to rates has been discussed in Chapter I of this study. There it is shown that the connection is by no means fanciful, but that the more serious charge against overcapitalization is that it injures railway service.

(b) It is apparently true that rates fell instead of rising. That was due largely to competition, and perhaps partly to state regulation. If Professor Ripley understood the contrary, he was misinformed. *But if one takes his words literally, they are perfectly true.* The Alton reorganization, by injuring the company's credit, has certainly "created the need for high rates of service in order to support the fraudulent capitalization." To be sure, this need has not yet been satisfied. But are not railway spokesmen constantly telling us that in the future, the salvation of the transportation service of the country depends on securing some method of rate control which will enable the *weak roads* to earn sufficient profits? And has not the Alton become one of those weak roads that demand special tenderness?

10. "The most surprising of all Professor Ripley's misstatements is that which charges Mr. Harriman with 'crippling' the Alton road 'physically.'" As a matter of fact, so far from crippling it, he built it up. When he bought it, it was a run-down, old-fashioned railway; when he left it, it was a first-class, modern system.

Ans. No one can deny that Mr. Harriman made conspicuous improvements. It is true that a large amount of deferred maintenance had not been made good when he left control. Nevertheless, the physical condition was immensely improved.

But this accomplishment, however creditable, does not belie the charge that great harm was done by the financial reorganization. These two preformances were entirely separate, and the latter was not a necessary means of accomplishing the former. Mr. Harriman's management therefore did two things—it improved the road physically, and it injured its credit. The latter circumstance made it impossible for the new administration to maintain the very standards of physical efficiency that Mr. Harriman had himself inaugurated.

APPENDIX D

BIBLIOGRAPHY ON THE REGULATION OF THE SECURITY ISSUES OF RAILROADS AND OTHER UTILITIES

Consideration of space has required the restriction of this list to references that touch directly on the subject of security regulation; hence the omission of many of the other references that have appeared in the footnotes of this study. The preparation of this bibliography has been much facilitated by the typewritten *List of References on Regulation of the Issuance of Railroad Stocks and Bonds*, prepared by the Bureau of Railway Economics in Washington, and dated January 12, 1919. The last-named list contains about fifty references that are not mentioned below, either because they did not seem of sufficient importance, or because they do not bear directly on the subject, or else because they were not accessible to the present writer.

- Andrews, Edward L., "The President's Proposal for a Federal Railway System." *Albany Law Journal*, vol. lxix (1907), pp. 266-71.
- Atwood, Albert W., "Protecting the Stockholder. Part IV: By Law." *Harper's Weekly*, vol. lviii, Feb. 28, 1914, pp. 28-31.
- Ayres, Arthur U., "Governmental Regulation of Security Issues." *Political Science Quarterly*, vol. xxviii (1913), pp. 586-92.
- Barron, Mary L., "State Regulation of the Securities of Railroads and Public Service Companies." *Annals of the American Academy of Political and Social Science*, vol. lxxvi (March, 1918), pp. 167-90.
- Bauer, John, "The Control of Return on Public Utility Investments." *Political Science Quarterly*, vol. xxxi (1916), pp. 260-88.
- , "The Brooklyn Edison Case Decided." *American Economic Review*, vol. vii (1917), pp. 438-42.

Capitalization not a factor in value for rate making.

- Beale, Joseph H. & Wyman, Bruce, *Railroad Rate Regulation*, 2d ed. by Bruce Wyman. New York, 1915. Ch. vi, "Basis of Capital Charges," Topic B, "Outstanding Capitalization."
- Birdseye, Cumming & Gilbert, editors, *Annotated Consolidated Laws of the State of New York*, 2d ed. New York, 1918. Abstracts of court and commission decisions on the Public Service Commissions Law of New York, relative to control of capitalization, vol. vi, pp. 6914-21, 6939-44, 7104-05.

- Bullock, Charles J., "Control of the Capitalization of Public Service Corporations in Massachusetts." *American Economic Association Publications*, series no. 3, vol. x (1909), pp. 384-414. Discussion, pp. 415-30.
- Calkins, Grosvenor, "Massachusetts Anti-Stock-Watering Law." *Quarterly Journal of Economics*, vol. xxii (1908), pp. 640-45.
- Chamber of Commerce of the United States of America, *Referendum No. 21 on the Report of the Railroad Committee on Questions of Railroad Regulation*. Washington, D. C., September 12, 1917.
- Clements, Judson C., "Public Control of Railway Capitalization." *Railway Age Gazette*, vol. lix (1915), pp. 1227-8.
- Cleveland, Frederick A. & Powell, F. W., *Railroad Finance*. New York, 1912.
- Commercial and Financial Chronicle*, "Financial Government by Commission," vol. lxxxvii (1908), pp. 1391-2.
- , Editorial on decision of New York Court of Appeals in the Delaware and Hudson case, vol. lxxxix (1909), pp. 1504-5.
- Dawes, Rufus C., "Regulation of Utility Corporations: Criticism of Commission Control in Limiting Capitalization and Stock Issue on Public Service Properties." *Public Service*, vol. ix (1910), pp. 78-80.
- Duff, R. C., *The Attitude of the Texas Banker to Texas Railroads*. Houston, 1911. Reprinted from *Texas Bankers' Journal*, April, 1911.
- Dunn, Samuel O., *The American Transportation Question*. New York, 1912. Pp. 258-67, "Regulation of Finances."
- , *Regulation of Railways*. New York, 1918. Ch. viii, "Regulation of Securities."
- Electric Railway Journal*, "New York Public Service Commission's Report to Legislature," vol. xxxiii (1909), pp. 133-7.
- , "Attitude of Massachusetts Commission on Questions Affecting Capitalization," vol. xxxiii (1909), p. 339.
- , "Consolidated Stock Not Limited by Fair Value," vol. xlviii (1916), pp. 965-7.
- Discusses a decision of the Illinois Public Service Commission.
- Electrical World*, "Issuance of Stock for Purposes of Consolidation," vol. lxviii (1916), pp. 266-8.
- Discusses a decision of the Illinois Public Service Commission.
- Erickson, Halfred, *Regulation of Public Utilities: Three Discussions*. Madison, Wis., 1911. Pt. iii, "Government Regulation of Security Issues."
- , "Should Government Regulate Security Issues of Public Utilities?" *Public Service*, vol. xiii (1912), pp. 115-21.
- Escher, Franklin, "The Hadley Report's Bearing on Railroad Investments," *Harper's Weekly*, vol. lvi, Jan. 6, 1912, pp. 28-9.

- , "The Problem of the Railways. V. Proposed Federal Control of Railway Security Issues." *Harper's Weekly*, vol. lvi, Sept. 28, 1912, p. 22.
- Eshleman, John M., "Should the Public Utilities Commission Have Power to Control the Issuance of Securities?" *Annals of the American Academy of Political and Social Science*, vol. liii (May, 1914), pp. 148-61.
- Farwell, F. C., "Why Railroad Financing in Iowa is Difficult." *Electric Railway Journal*, vol. xxxix (1912), pp. 696-7.
- Fink, Henry, *Federal Regulation of Railroad Securities and Valuation of Railroad Properties. Letter to the Railroad Securities Commission in Reply to Request for Information and Opinions*, New York, December 31, 1910. Roanoke, Va., 1911(?).
- Gardiner, W. H., Jr., *The London Sliding Scale as a Method for the Government Regulation of Public Service Corporations. Read before the National Electric Light Association at its Twenty-First Convention, held at Atlantic City, New Jersey, June 5, 6, 7 and 8, 1906*. New York, 1906. Appendix A, "The Public Regulation of Gas Companies in Great Britain and Ireland, with Special Reference to the 'Sliding Scale,'" by Nathan Matthews. Appendix B, "An Act to Consolidate and Convert the Capital of the Gas Light and Coke Company of London, England."
- Geisse, H. L., "Attitude of Wisconsin Commission on Security Issues." *Electric Railway Journal*, vol. xlvii (1916), pp. 602-3.
- Gerstenberg, Charles W., *Materials of Corporation Finance*. 3rd ed. New York, 1915.
- Many valuable reprints on security regulation and capitalization.
- Gray, John H., "Competition and Capitalization, as Controlled by the Massachusetts Gas Commission." *Quarterly Journal of Economics*, vol. xv (1901), pp. 254-76.
- Haines, Henry S., *Problems in Railway Regulation*. New York, 1911. Ch. viii, "Problems in Finance."
- Haney, Lewis H., ed., *Some Corporation and Taxation Problems of the State*. Bulletin of the University of Texas, no. 236, Austin, 1912. "Railway Capitalization," by Judge N. A. Stedman, pp. 83-92. "Railway Capitalization in Texas," by R. F. Higgins, pp. 93-110. "Railway Capitalization and the Valuations of the Texas Commission," by Judge W. D. Williams, pp. 111-120.
- Heilman, Ralph E., "Two Rate Decisions of Importance." *Quarterly Journal of Economics*, vol. xxix (1915), pp. 840-8.
- Discusses the Middlesex and Boston Rate Case.
- , "The Development by Commissions of the Principles of Public Utility Capitalization." *Journal of Political Economy*, vol. xxiii (1915), pp. 888-909.

- , "Commission Control of Refunding Utility Securities." *Utilities Magazine*, vol. i, March, 1916, pp. 26-30.
- , "The Control of Interstate Utility Capitalization by State Commissions." *Journal of Political Economy*, vol. xxiv (1916), pp. 474-88.
- , "Capitalization of Public Utility Consolidations." *American Economic Review*, vol. vii (1917), pp. 187-94.
- Higgins, R. F., see Haney, Lewis H., ed.
- Hines, Walker D., *Statement of Walker D. Hines before Railroad Securities Commission at New York, December 22, 1910*. New York, 1910 (?).
- Holmes, Fred L., *Regulation of Railroads and Public Utilities in Wisconsin*. New York, 1915. Ch. xvi, "Regulation of Stocks and Bonds."
- Ignatius, Milton B., *The Financing of Public Service Corporations*. New York, 1918.
- Johnson, Emory R., "Regulation of Railroad Securities." *Investment Weekly*, vol. xix (1917), pp. 14-15.
- Journal of Commerce* (New York). Editorials on federal regulation of railway securities. Nov. 5, 1913, p. 8; May 9, 1914, p. 4; May 21, 1914, p. 4; June 22, 1914, p. 4; June 30, 1914, p. 4; July 24, 1914, p. 4; Nov. 5, 1915, p. 4.
- Knox, Philander C., "The People, the Railroads, and the National Authority." *Albany Law Journal*, vol. lxx (1908), pp. 144-49 (147-48).
- La Follette, Robert M., "Let Us Reason Together." Editorial, *La Follette's Weekly*, vol. vi, no. 5 (January 31, 1914), pp. 1-3.
- Opposes security regulation.
- Lane, Franklin K., "Railroad Capitalization and Federal Regulation." *American Review of Reviews*, vol. xxxvii (1908), pp. 711-14.
- Lawton, W. H., "Government Regulation of Securities." *Journal of Accountancy*, vol. xii (1911), pp. 357-60.
- Literary Digest*, "Fatherly Guidance for Railroad Financiers," vol. xlviii (1910), pp. 49-50.
- Lovett, Robert S., *Statement of R. S. Lovett before the Railroad Securities Commission. (As rearranged and amplified.) . . . December 21, 1910*. New York, 1911 (?).
- Lyon, Hastings, *Corporation Finance*. Boston, 1916.
- Massachusetts, *Report of the Commission on Commerce and Industry, March, 1908*. Boston, 1908. Pp. 57-69, "Massachusetts Statute Regulating the Issue of New Stock by the Public-Service Corporations."
- , *Report of the Special Commission to Investigate Voluntary Associations, Boston, January 4, 1913*. House no. 1788.
- , *Information Relative to Voluntary Associations Owning or Controlling Public Service Corporations*. Public Document, no. 101. Boston, 1913.

- , *Report of Tax Commission on Voluntary Associations*, Boston, January 17, 1912. House no. 1646.
- Matthews, Nathan, see Gardiner, W. H., Jr.
- Mead, Edward S., *Corporation Finance*. Rev. ed. New York, 1915. Ch. vi, "State Supervision of Securities."
- , "The Public Service Commission and the Investor." *Lippincott's Monthly Magazine*, vol. xc (1912), pp. 764-8.
- Miller, E. T., "The Texas Stock and Bond Law and Its Administration," *Quarterly Journal of Economics*, vol. xxii (1907), pp. 109-19.
- Moody's Magazine*, "Government Regulation of Bond and Stock Issue," vol. xi (1911), pp. 53-4.
- Morris, Ray, *Railroad Administration*. New York, 1920. On security regulation, see pp. 215-23.
- Mulvey, Thomas, Under Secretary of State of the Dominion of Canada, *Company Capitalization Control. Report on Existing Legislation in Canada and Elsewhere*. Ottawa, 1913.
- , "Certified Securities." *American Economic Review*, vol. iv (1914), pp. 588-601.
- , "Blue Sky Law." *Canadian Law Times*, vol. xxxvi (1916), pp. 37-45.
- National Association of Railway Commissioners, *Proceedings*, 1889-1918. Most of the recent numbers contain discussions of security regulation. See, esp., *Proceedings of 25th Annual Convention* (1913), and of *28th Annual Convention* (1916).
- National Civic Federation, *Commission Regulation of Public Utilities; a Compilation and Analysis of Laws of Forty-Three States and of the Federal Government, for the Regulation by Central Commissions of Railroads and Other Public Utilities*. New York, 1913. Pp. 849-906, "Stock and Bond Issues."
- , *Draft Bill for the Regulation of Public Utilities With Documents Relating Thereto. Authorized to be Published by the National Civic Federation, October 23, 1914*. New York, 1914.
- "Newlands Committee," *Hearings*. See United States Congress, Joint Committee on Interstate and Foreign Commerce.
- Potts, Charles S., *Railroad Transportation in Texas*. Bulletin of the University of Texas, no. 119, March 1, 1909. Ch. ix, "Control of Capitalization—the Stock and Bond Law."
- , "Texas Stock and Bond Law." *Annals of the American Academy of Political and Social Science*, vol. liii (May, 1914), pp. 162-71.
- Public Service*, "Ohio Utility Commission is Criticized by Financiers," vol. xiii (1912), p. 70.
- Railway Age Gazette* [Nearly every volume of recent years contains discussions of railroad security regulation.]
- , "Many Railway Presidents Favor Federal Supervision of Securities," vol. lvi (1914), p. 39.

- , "Regulation of Railway Securities," vol. lvi (1914), pp. 61-2.
Railway and Engineering Review, "The Effect of regulation in Texas,"
 vol. lii (1912), pp. 493-95.
Railway World, "To Regulate the Issuance of Railway Securities,"
 vol. lviii (1914), pp. 345-47.

Ramstedt, A. P., Extracts of letter of A. P. Ramstedt, Chairman of the
 Public Utilities Commission of Idaho, on the subject of Railway
 Regulation, addressed to Senator Newlands. *Railway Age Gazette*,
 vol. lxi (1916), p. 1134.

Rea, Samuel, *Reprint of Letter to Railroad Securities Commission*,
 February 6, 1911. Philadelphia(?), 1911.

Reynolds, C. A., "Overcapitalization of Public Utilities." *Case and
 Comment*, vol. xxi (1915), pp. 875-77.

Ripley, Edward P., *Address before the Texas Welfare Commission*,
 Austin, May 21, 1912. Subject, "Railroads and Railroad Securities
 in Texas."

Ripley, William Z., *Railroads: Rates and Regulation*. New York, 1913.
 Review of the Report of the Railroad Securities Commission, pp.
 573-78.

Substantially a reprint of an article in the *American Economic
 Review*, mentioned below.

—, *Railroads: Finance and Organization*. New York, 1915. Ch. ix,
 "State Regulation of Security Issues."

—, "The Capitalization of Public Service Corporations." *Quarterly
 Journal of Economics*, vol. xv (1901), pp. 106-37. Reprinted in
Trusts, Pools and Corporations, 1st ed. (Boston, 1905), ch. vii.

—, "Railroad Valuation." *Political Science Quarterly*, vol. xxii
 (1907), pp. 577-610.

—, "Report of the Railroad Securities Commission." *American
 Economic Review*, vol. ii (1912), pp. 181-85.

—, "One Law Instead of Forty-Eight." *New York Times Annalist*,
 vol. iii (1914), pp. 588-89.

—, "Public Regulation of Railroad Issues." *American Economic Re-
 view*, vol. iv (1914), pp. 541-64.

Substantially reprinted as ch. ix in *Railroads: Finance and
 Organization*.

Sinsheimer, Paul, "Financial Aspects of Valuation." *Utilities Magazine*,
 vol. i, Nov., 1915, pp. 165-69.

Smalley, Harrison S., "The Regulation of Railway Capitalization." *Edi-
 torial Review*, vol. iv (1911), pp. 275-86.

Spencer, Arthur M., "The Prevention of Stock-Watering by Public
 Service Corporations." *Journal of Political Economy*, vol. xiv
 (1906), pp. 542-52.

Stedman, Judge N. A., see Haney, Lewis H., ed.

- Stiles, Meredith, N., "Problems of the Railroad Securities Commission." *Moody's Magazine*, vol. xi (1911), pp. 167-72.
- Stoddard, W. L., "Possible Railway Securities Legislation." *Railway Age Gazette*, vol. lix (1915), p. 946.
- , "The Securities Bill Side-Track." *Railway Age Gazette*, vol. lx (1916), p. 154.
- Taft, William Howard, President, *Presidential Message of January 7, 1910*, Cong. Rec., vol. xlv, p. 461 *et seq.*
- Recommends federal control of railroad securities.
- Thelen, Max, "The Newlands Railroad Investigation." *Utilities Magazine*, vol. ii, Jan., 1917, pp. 1-9. Reprinted in the *Hearings of the "Newlands Committee,"* pp. 1069-78.
- , "Federal Incorporation of Railroads." *Utilities Magazine*, vol. ii, March, 1917, pp. 1-11. Reprinted in the *Hearings of the "Newlands Committee,"* pp. 1085-94.
- , "Desirable Scope and Method of Federal Regulation of Railroad Securities." *Annals of the American Academy of Political and Social Science*, vol. lxxvi (March, 1918), pp. 191-201.
- Thompson, R. A., "Regulation of the Issuance of Texas Railroad Securities by the State Government." Address before the Texas Academy of Science at Austin, October 24, 1902. *Transactions of the Academy for 1902*, pp. 1-17.
- , "Methods Used by the Railroad Commission of Texas under the Stock and Bond Law, in Valuing Railroad Properties." *Transactions of the American Society of Civil Engineers*, vol. lii (1904), pp. 328-45. Discussion, pp. 346-64.
- Trumbull, Frank, *Statement of Mr. Frank Trumbull, Chairman of the Board of Directors of the Chesapeake and Ohio Railway Company, before the Federal Railroad Securities Commission at New York, December 22, 1910. (Revised.)* New York(?), 1910.
- United States. Congress. House. Committee on Interstate and Foreign Commerce.
- Hearings . . . on H. R. 6268 to Limit the Issue of Stocks and Bonds.* [May 12, 1908]. Washington, 1908.
- Hearings before the Committee . . . on Bills Affecting Interstate Commerce.* [Jan. 18-March 25, 1910]. Washington, 1910. On security regulation, pp. 611-42; 669-75; 803-22; 1142-52; 1171-77; 1279-84.
- Hearings on the Bill H. R. 12811. Investigation and Report of Property Values, Together with the Status and Control of Stocks and Bonds of Carriers Subject to the Act to Regulate Commerce. February 15 and 16, 1912.* [The "Physical Valuation Bill"]. Washington, 1912.
- . . . *Amendment of Act to Regulate Commerce.* House Rep. 637, 63d Cong., 2nd Sess. Washington, 1914.

- Proposed Amendments to Section 20 of the Act to Regulate Commerce* . . . House Rep. 681, 63d Cong., 2d Sess. Washington, 1914.
- "Regulation of the Issuance of Stocks and Bonds by Common Carriers."* *Hearings before the Committee* . . . February 9 to March 17, 1914. Washington, 1914.
- Return of Railroads to Private Ownership. Hearings* . . . 3 vols. Washington, 1919. On security regulation see Index, vol. iii, s. v. "Capitalization" and "Securities."
- United States. Congress. Joint Committee on Interstate and Foreign Commerce. [The "Newlands Committee"]. *Hearings* . . . Pursuant to Public J. Res. 25, a Joint Resolution Creating a Joint Sub-Committee . . . to Investigate the Conditions Relating to Interstate and Foreign Commerce, and the Necessity of Further Legislation Relating Thereto . . . 3 vols. Washington, 1916-18.
- Contains several discussions of security regulation.
- United States. Congress. Senate. Committee on Interstate Commerce. *Valuation of the Several Classes of Property of Common Carriers. Report of the Committee* . . . with *Hearings*. Sen. Rep. 1290, 62d Cong., 3d Sess. Washington, 1913.
- Security regulation discussed.
- Government Control and Operation of Railroads. Hearings before the Committee* . . . Pursuant to S. Res. 171 . . . Parts 1 to 7. Washington, 1918. On security regulation see Index, s. v. "Capitalization" and "Securities."
- Extension of Tenure of Government Control of Railroads. Hearings* . . . 3 vols. Washington, 1919. On security regulation see Indexes, vols. i and iii, s. v. "Capitalization," "Securities," and "Stocks and Bonds."
- United States. Railroad Securities Commission, *Report of the Railroad Securities Commission to the President and Letter of the President Transmitting the Report to Congress*. 62d Cong., 2d Sess. House Doc. no. 256. Washington, 1911.
- , *Indexes to Evidence*. Printed in small number at Government Printing Office.
- The evidence itself, amounting to about 5,000 typewritten pages, was not printed, but copies were supplied to each member of the Commission and to the Interstate Commerce Commission.
- , *References to State Laws in Regard to Securities of Railroad Corporations, Compiled January, 1911*. Washington, 1911.
- Wang, Ching Chun, *Legislative Regulation of Railway Finance in England*. University of Illinois Studies in the Social Sciences, vol. vii, nos. 1-2. Urbana, 1918.
- Warren, Bentley, "Regulation in Massachusetts. Discussion of the Report of the Railroad Securities Commission." *Aera*, vol. i (1913), pp. 672-77.

- Whitten, Robert H., *Regulation of Public Service Companies in Great Britain; with Supplementary Chapters on the Boston Sliding Scale and Toronto Auction Sale and Maximum Dividend Plans*. New York, 1914. Reprint of Appendix G of the *Annual Report of the New York Public Service Commission for the First District, December 31, 1913*.
- , *Valuation of Public Service Corporations; Legal and Economic Phases of Valuation for Rate Making and Public Purchase*. 2 vols. New York, 1914. On problems of security issues see Index, s. v. "Capitalization."
- Wickersham, George W., *Federal Control of Stock and Bond Issues by Interstate Carriers. An Address before the Illinois State Bar Association, Chicago, Illinois, June 24, 1910*. Washington, 1910. Reprinted in *The Changing Order; Essays on Government, Monopoly, and Education, Written during a Period of Readjustment*. New York, 1914.
- Williams, Judge W. D., see Haney, Lewis H., ed.
- Williams, William H., *Letter to the Railroad Securities Commission in Reply to Their Request for Information and Opinions upon Questions pertaining to the Issuance of Stocks and Bonds of American Railways*. New York, 1911.
- Wyman, Bruce, see also Beale & Wyman.
- , *Wyman on Public Service Corporations*. Full title: *The Special Law Governing Public Service Corporations, and all Others Engaged in Public Employment*. 2 vols. New York, 1911. Vol. ii, ch. xxxii, topic B, "Outstanding Capitalization."

INDEX

A

- Accounts, manipulation of, 22-24, 57-61; Alton case, 175, 183f.
 Actual cost, capitalization as evidence of, 22-25; as basis of capitalization, 77-82, 98
 Adams, C. F., Jr., evils of stock watering, 15 n. 3
 Adams, J., Jr., shares without par, 100 n.
 Adamson, Representative, railway securities bill, 30 n. 1
 Allied Packers, Inc., shares without par, 105 n. 1
 Alton (*see* Chicago & Alton)
 Anthracite Coal Rate Case (I. C. C.), 161 n. 3
 Arizona statutes, on purposes of issue, 79 n. 5; stock below par, 94
 Assets, capitalization and (*see* Capitalization)
 Atlantic Lobos Oil Co., shares without par, 105 n. 1
 Atwood, A. W., shares without par, 100 n.
 Auction, sale of stock at, 138

B

- Babylon Electric Light Co., *Re* (N. Y. P. S. C. 2nd Dist.), 79 n. 3
 Bachrach v. Consolidated Gas, *etc.* (Md. P. S. C.), 158 n. 1, 166
 Balance Sheet (*see also* Accounts), entry of no-par shares, 118-20, 122 n. 3; Alton finance, 171, 183f.
 Barron, M. L., 11; stock dividends, 74 n. 2; purposes of issue, 79 n. 5; stock below par, 94 n. 2; state laws on security regulation, 133 n. 1; principles of security regulation, 135; ratio of stocks to bonds, 141
 Basis of Capitalization (*see* Contents of Ch. III), bibliography, 195]

- 64; the problem, 64-67; rate-making value as, 67-73, 88; original investment as, 74-77, 88, 98; actual cost as, 77-82, 88, 98; market value as, 82-88, 178f.; earning capacity as, 82-88, 178f.; conflicting practices of commissions, 88-91; summary, 98f.
 Bauer, J., 12; control of rates by security issues, 138 n. 1; capitalization and fair value, 158 n. 2
 Bay State Rate Case (Mass. P. S. C.), 89 n. 2
 Beale & Wyman, rate of return, 31 n. 3; capitalization and fair value, 156 n. 1, 157
 Ben Avon Borough v. Ohio Valley Co. (Pa. P. S. C.), 158 n. 2
 Bennett, R. J., shares without par, 101
 Bibliographies, relation of capitalization to rates, 14; basis of capitalization, 64; shares without par, 100f.; security regulation, 186-94
 Black Stream Electric Co., Appl. of (Me. P. U. C.), 94 n. 3
 Blackstone management of Alton, 170, 183
 Bonds and other evidences of debt, excess more dangerous than watered stock, 45-48; overissues furthered by forbidding sale of stock below par, 94, 109; income bonds, 48f.; ratio to stock, 139-46; sale at discount by Alton, 170f., 175, 177
 Bonus stock, criticized and defended, 53 n. 1
 Book values (*see also* Capitalization), relation to capitalization, 22-25, 59-61
 Borrowing (*see* Bonds and other evidences of debt)

- Boston & Maine (*see also* New England railways), inferior service, 39 & n. 1
- Boston Suburban Electric Companies, shares without par, 105 n. 3
- Boston & Worcester Electric Companies, shares without par, 105 n. 3
- Bronx Gas & Electric Co., *Re* N. Y. P. S. C. 1st Dist.), 69 n. 2
- Bullock, C. J., security regulation, 135; control of stock issues in Massachusetts, 138 n. 2
- C**
- California Railroad Commission, basis of capitalization, 69f.; stock dividends allowed, 78 n. 6, 79; stocks below par, 94, 98; shares without par, 104; ratio of bonds to stocks, 142 & n. 3; capitalization and rates, 167f.
- California statutes, on purposes of issue, 79 n. 5; shares without par, 102, 105, 115, 123, 127; ratio of bonds to stocks, 142
- Canadian American Power Co., *Re* (N. Y. P. S. C. 2nd Dist.), 84
- Capital account, treatment of shares without par, 118-24; Alton finance, 171-73, 176
- Capital, impairment of, 58; alleged danger of removing par values, 121-24
- Capital stock (*see* Stocks, *also* Shares without par value)
- Capitalization (*see also* Basis of capitalization, *and* Stock watering)
- and assets, relation between on American railroads, 24 & n. 1, 92f.; reasons for equalizing, 90f.; difficulties of equalizing, 91-99; equalization unnecessary, 97
- of consolidations, 110; federal law, 134f.
- of good will, 128
- and rates, relation between (*see* Contents of Ch. I), bibliography, 14; discussion, 9, 14-38; conclusions, 37f.; Alton as example, 184f.
- of reorganizations 47, 49, 83, 88f., 90, 109-11, 134f.
- scaling down excessive outstanding, 91-93, 146-53
- and service, relation between, 13f., 38-43; Alton as example, 184f.
- of surplus, laws and decisions on, 74f., 77-82; arguments pro and con, 81f.; Alton, 176f.
- and value for rate making, relation between, 21-31, 156-61; conclusions, 29-31
- Central Hudson Gas & Electric Co., *Re* (N. Y. P. S. C. 2nd Dist.), 80 n. 1
- Central Massachusetts Light & Power Co., shares without par, 105, n. 3
- Certificates of participation, without par value, 101f., 106 n.
- Chamberlain, L., relation of fixed charges to earnings, 145 n.
- Charges, fixed, relation to earnings, 145 n.
- Charges, transportation, effect of capitalization on (*see* Capitalization and rates)
- Chesapeake & Potomac Telephone Co., *Re* (Md. P. S. C.), 68 n. 3
- Chicago & Alton, relation of capitalization to rates, 19, 38; recapitalization as example of financial abuses, App. C, 33, 38, 55 & n. 2, 141
- Chicago & Eastern Illinois, payment of excessive dividends to Frisco, 51; financial manipulation, 163
- Chicago Elevated Railways, shares without par, 105 n. 3; entry of no-par shares on books, 119 n.
- Chicago Great Western, relation of capitalization to rates, 19; poor service, 38; cost of rehabilitation, 39
- Chicago, Milwaukee & Puget Sound, fictitious stock issue and falsified accounts, 59
- Chicago Railways Co., shares without par, 105 n. 3
- Chicago, Rock Island & Pacific, relation of capitalization to rates, 19; evil effects of overcapitalization, 33, 38, 41, 55f.; manipulation of accounts, 58; speculative stocks, 114; excessive debt, 141; control of Alton, 173 & n. 1

- Cincinnati, Hamilton & Dayton, manipulation of accounts and payment of dividends out of capital, 58; financial weakness, 163
- City of Lincoln *v.* Lincoln Water & Light Co. (Ill. P. U. C.), 158 n. 2
- Clark, Commissioner, relation of capitalization to rates, 28
- Clark, W. H. & Jenks, basis of capitalization, 64 n. 1
- Clements, Commissioner, relation of capitalization to rates, 28; plea for higher rates to support credit, 164
- Cleveland & Powell, basis of capitalization, 64 n. 1
- Clews, H., criticism of stock watering, 15 n. 3; relation of capitalization to rates, 17 n. 2
- "Clover Leaf Line" (*see* Toledo, St. Louis & Western)
- Cole, W. M., basis of capitalization, 64 n. 1, 86f.; criticism of shares without par, 100 n., 118
- Commissions, public service (*see also* Security regulation, Interstate Commerce Commission, New York Public Service Commission, *etc.*), rate regulation, 20-22, 31f., 65f.; capitalization as factor in rate-making value, 21-31, App. A; capitalization and rate of return, 31-38; plea for higher rates to support credit, 33-35, App. B; guaranty of securities not created by approval, 26 n. 2; causes of railway failures, 42f.; restriction of indebtedness, 139-46
- Common Stocks, evils of over-issue, 50-57
- Competition, effect of capitalization on amount of, 17 n. 2; effect of capitalization of rates under, 18f.; as cause of railway failures, 41
- Concealment of investment by stock watering, 22-25, 57-61
- Congress (*see* United States Congress)
- Consolidations, capitalization of, 109f., 134f.; of interstate railways, 147
- Constitution, guaranties of property rights, 20f., 147f.
- Convertible stock, issue allowed by New York commission, 94 n. 3
- Conyngton, T., basis of capitalization, 64 n. 1
- Cost, actual (*see* Actual Cost, *also* Original investment)
- Courts (*see also* United States Supreme Court, New York Court of Appeals, *etc.*), control over rates, 20-23, 26f., 29; capitalization as factor in fair value, 21-23, 26, 29, 156f.; rate of return, 31, 32 n. 1, 51; basis of capitalization, 71f., 75 n. 1 & 2, 76, 83 n. 3, 85f.; capitalization of outside property, 71 n. 1; treatment of surplus for rate making, 77; ratio of bonds to stocks, 144; scaling down excessive capitalization, 151f.
- Credit, effect of capitalization on, Ch. II; Alton case, 185; protection of as factor in rate making, 33-35, 44, App. B; effect of weak credit on railway service, 38-43; means of reestablishing railway credit, 152f.
- Cuba Cane Sugar Corp., shares without par, 105 n. 1
- D**
- Daggett, S., railway reorganizations, 39, 47 n. 1; causes of railway failures, 41 n. 3, 42 n. 1; preferred stocks and income bonds in reorganizations, 49 & n. 1; falsified accounts of Erie, 51 n. 1, 58 n. 1
- Debt, funded (*see* Bonds and other evidences of debt)
- Deception, chief evil of over-capitalization, 23-25, 52-57, 96f., 106-09
- Delano, F. A., capitalization and rates, 19 n. 1
- Delaware & Hudson Co., *Re* (N. Y. P. S. C. 2nd Dist.), 71 n. 1
- Delaware, Lackawanna & Western, relation of capitalization to rates, 19
- Delaware statutes, ratio of bonds to stocks, 141; shares without par, 102, 104 & n. 3, 115f., 116 n. 1, 124, 127

- Dewing, A. S., shares without par, 101 n.
- Dillon, S., defense of stock watering, 15 n. 3
- Discount, sale of bonds at, by Alton, 170*f.*, 175, 177
- District of Columbia statutes, stock dividends forbidden, 74
- Dividends (*see also* Stock dividends), tendency to become quasi-fixed charge, 50-52; excessive, a result of overcapitalization, 48-57; common stock, 50-52; preferred stock, 48*f.*; payment out of capital, 58, 121-24; payment out of surplus, 120 & n. 1, 171, 175
- Dry Docks, East B'way & Battery R. R. Co., *Re* (N. Y. P. S. C. 1st Dist.), 142 n. 1
- Duff, R. C., Texas Stock and Bond Law, 149 n.
- Dunham, *Re* (Mo. P. S. C.), 70 n. 2, 89 n. 1
- Dunn, S. O., effect of overcapitalization on service, 13 n. 1
- Dwight, F., shares without par, 100 n.

E

- Earning capacity, as basis of capitalization, 82-98, 178*f.*
- Earnings, exaggeration of by railway managements, 58*f.*, 182*f.*
- East Boston Gas Co. case (Mass. Gas Commiss.), 75 n. 1
- Eastern Rate Advance Case of 1911 (I. C. C.), 160, 162*f.*
- Edgerton, Commissioner, shares without par, 104 n. 2
- Edison Electric Illuminating Co. of Fall River, case (Mass. Gas. Commiss.), 75 n. 1
- Elliott, President of New Haven, plea for higher rates, 34
- Empire Gas & Electric Co., *Re* (N. Y. P. S. C. 2nd Dist.), 168 n. 3
- England, regulation of rates and securities (*see* Great Britain)
- Equity, trading on, 140; encouraged by American method of rate control, 140 n.
- Erickson, Commissioner, shares without par, 100 n. 1, 104 n. 1, 125

- Erie Railroad Company, *Re* (N. Y. P. S. C. 2nd Dist.), 94 n. 3
- Erie, relation of capitalization to rates, 19; payment of unearned dividends, 51; falsification of earnings, 58; convertible bonds, 94 n. 3
- Escher, F., shares without par, 100 n.
- Eshleman, Commissioner, shares without par, 104 n. 2; capitalization and rates, 14 n. 1, 167
- "Expedient rate" versus "fair rate," 31-36, App. B.
- Express rate decision of 1912 (I. C. C.), 161

F

- Failures, causes of railway, 41-43
- "Fair rate" of return, *versus* "expedient rate," 31-36, App. B.
- Fair value for rate making, capitalization as factor in, 21-31, App. A
- Fall River Gas Works Co. case (Mass. Gas Commiss. and Mass. Sup. Ct.), 75 n. 1
- Falsification of accounts, a means of inflating market values, 57-59
- Fankhauser, W. C., causes of railway failures, 42 n. 1
- Federal regulation of securities, 10*f.*, Ch. V; provisions of Transportation Act of 1920, 132-35
- Fifteen Per Cent Rate Case (I. C. C.), 25, 161 n. 3, 164*f.*
- Fink, President, capitalization of Alton surplus, 176
- Fisher, *Re* (Mo. P. S. C.), 168 n. 1
- Five Per Cent Rate Case (I. C. C.), 25, 161, 163*f.*
- Franchise value, capitalization of, 128
- Frisco (*see* St. Louis & San Francisco)
- Funded Debt (*see* Bonds and other evidences of debt)

G

- Geisse, H. L., stock below par, 94 n. 3
- General Motors Corp., shares without par, 105 n. 2
- Georgia Railroad Commission, stock dividends, 79 n. 3

- Georgia statutes, on purposes of issue, 79 n. 2; stock dividends, 79 n. 3
- Germany, certificates without par value in, 102
- Gerstenberg, C. W., shares without par, 100 n.
- Going value, a cloak for watered stock, 28; Wisconsin use, 71
- Good will, capitalization of, 128
- Goodrich, Co., B. F., shares without par, 105 n. 2
- Gould roads, financial breakdown, 41
- Government regulation (*see* Commissions, public service, and Security regulation)
- Grafton County Electric Light & Power Co. case (N. H. P. S. C.), 75 n. 2
- Grafton County Electric Light & Power Co. *v.* State (N. H. Sup. Ct.), 75 n. 2, 85 & n. 3
- Great Britain, stock watering in, 25, 60*f.*; sale of stock at auction, 138 & n. 1; rate control in, contrasted with American methods, 140 n. 1
- Great Northern, watered stock, 159*f.*
- Guaranty of security issues, not intended under regulation, 26 n. 2

H

- Hadley, A. T., capitalization and rates, 14 n. 1, 17 & n. 1 & 2
- Hale, L. P., purposes of issue in N. Y., 80 n. 3
- Handley *v.* Stutz (U. S. Sup. Ct.), 116 n. 2
- Harlan, Commissioner, capitalization and fair value, 160; on plea for higher rates to support credit, 165
- Harriman, E. H., reorganization of Alton by, App. C
- Hatfield, H. R., 12; fictitious accounting, 59 n. 3; undervaluation of assets, 95 n.
- Haverhill Gas Co. case (Mass. Gas Commiss.), 75 n. 1
- Heilman, R. E., 11; object of security regulation, 64 & n. 2; stock below par, 94 n. 2; principles of security regulation, 135; treatment of outstanding capitalization, 148 n.
- Holding companies, public utility, issue of no-par shares by, 105, n. 3; Alton, 171*f.*, 175
- Holmes, F. L., shares without par, 104 n. 1
- Hudson, J. F., evils of stock watering, 14 n. 1
- Hudson River & Eastern Traction Co., *Re* (N. Y. P. S. C. 2nd Dist.), 142 n. 1
- Hulme, T. W., capitalization and valuation of American railways, 24 n.
- Hurdman, F. H., shares without par, 100 n., 102 n. 5

I

- Ignatius, M. B., 11; capitalization and rates, 14 n. 1; shares without par, 100 n., 107 n. 2, 125*f.*; dividends out of premium-surplus, 120 n.; powers of commissions, 133 n. 4; principles of security regulation, 135; treatment of outstanding capitalization, 148 n.
- Illinois Public Utilities Commission, basis of capitalization, 84*f.*; stock dividends allowed, 78
- Illinois statutes, on purposes of issue, 79 n. 5; shares without par, 102, 105, 124 & n. 1, 127
- Illinois Terminal Railroad Co., *Re* (Ill. P. U. C.), 85 & n. 1
- Impairment of capital, 58; with no-par shares, 121-24
- Income accounts *versus* capital accounts, 120 n.
- Income bonds, 48*f.*
- Indebtedness (*see* Bonds and other evidences of debt)
- Indiana Public Service Commission, stock dividends allowed, 78; ratio of bonds to stock, 142 n. 3; higher rates allowed to support credit, 167*f.*
- Indiana statutes, on purposes of issue, 79 n. 5; ratio of bonds to stocks, 142 & n. 3
- Inflation (*see also* Stock watering), of market value, 57-61, 111-13 126*f.*, 136*f.*, 139
- "Innocent investor" plea, 25

Intangibles, value of, a cloak for stock watering, 27f.

Interboro Consolidated Corp., shares without par, 103 n. 1, 105 n. 3

Interstate Commerce Commission, 21; accounting regulations, 22f.; capitalization and fair value, 14 n. 1, 23-28, 159-61; railways in receiverships, 42; protection of credit in rate cases, 35, 162-65; criticism of railway accounts, 58; exclusive control of security issues, 132-35; the Alton case, App. C

Interstate Consolidated Street Railway Co., *Petit. of* (Mass. R. C.), 165

Investment (*see* Original investment, *also* Actual cost)

Investors, plea for higher rates to protect, 25f., 27; deception of by overcapitalization, 51-57; deception of by false accounts, 57-61; injured by Alton reorganization, 169, 183f.

Iowa statutes, ratio of bonds to stocks, 141

Issuance price, governmental control of, 95-97, 134-39

J

Jenks & Clark, basis of capitalization, 64 n. 1

Johnson & Van Metre, basis of capitalization, 64 n. 1

Journal of Accountancy, capitalization and rates, 14 n. 1

K

Kansas City Electric Light Co., *Re* (Mo. P. S. C.), 158 n. 2

Kansas City street railway reorganization, 89 n. 1

Kansas statutes, on purposes of issue, 79 n. 2

Kendrick, J. W., financial breakdown of Missouri, Kansas & Texas, 41

Kennan, G., Alton reorganization, App. C

Kennecott Copper Corp., shares without par, 105 n. 1; entry of no-par shares on books, 119 n. 122 n. 3

Kester, R. B., 12; shares without par, 100 n.

Kings County Lighting Co. *v.* Willcox (N. Y. Ct. App.), 71 n. 2

Knoxville *v.* Knoxville Water Co. (U. S. Sup. Ct.), 157

Kuhn, A. K., shares without par, 100 n., 102, 125f.

L

Lackawanna (*see* Delaware, Lackawanna & Western)

Lane, F. K., opposes security regulation, 31; capitalization as factor in rate making, 160, 161, 162

Laws (*see* Statutes, state, *also* Federal regulation of securities)

Lawson, W. R., stock watering by British railways, 61 n. 1

Leach, A. B., plea for innocent purchaser of watered securities; 25f.

Legislation on security issues (*see* Statutes, state, *also* Federal regulation of securities)

Lewiston, Augusta & Waterville Street Railway, *Re* (Me. P. U. C.), 168 n. 5

Liability of holders of shares without par, 115f.

Lincoln, City of *v.* Lincoln Water & Light Co. (Ill. P. U. C.), 158 n. 2

Littlepage *v.* Mosier Valley Telegraph Co. (Ore. P. U. C.), 168 n. 6

Lough, W. H., basis of capitalization, 64 n. 1

Louisville & Nashville, improper accounting, 58

Lovett, R. S., capitalization and rates, 15f.; shares without par, 100 n., 124

Lyon, W. H., 12; bonus shares, 53 n. 1; basis of capitalization, 64 n. 1; shares without par, 100 n.

M

McDermott, E. R., stock watering by British railways, 61 n. 1

Maine Public Service Commission, stock below par, 94 n. 3; ratio of bonds to stocks, 143 n.; need for higher rates to uphold credit, 168

- Maine statutes, on purposes of issue, 79 n. 5; shares without par, 102, 105, 115 n. 2, 123, 127
- Maintenance, deferred, 39, 148, 182*f*.
- Maires *v*. Flatbush Gas Co. (N. Y. P. S. C. 1st Dist.), 69 n. 3
- Malden & Melrose Gas Light Co. case (Mass. Gas Com.), 75 n. 1
- Maltbie, Commissioner, basis of capitalization, 69
- Manhattan & Queens Traction Corp. *Re* (N. Y. P. S. C. 1st Dist.), 69 n. 2
- Manipulation of accounts, 22-24, 57-61; Alton case, 175, 183*f*.
- Market value, as basis of capitalization, 82-88, 178*f*.
- Maryland Public Service Commission, basis of capitalization, 67*f*.; stock dividends, 78, n. 6; capitalization and rates, 158; on need for higher rates to uphold credit, 166*f*.
- Maryland statutes, shares without par, 102, 104 & n. 4, 123 & n. 2, 127; protection of outstanding bonds, 158
- Massachusetts regulating commissions, on plea for higher rates to uphold credit, 35, 165*f*.; breakdown of New England railways, 39*f*.; basis of capitalization, 74*f*.; capitalization of surplus, forbidden, 75 & n. 1; conflicting principles of security regulation, 89*f*.; early control of issues, 91; sale of stock at premiums, 95, 138*f*.; treatment of outstanding capitalization, 92, 148*f*.
- Massachusetts statutes, stock dividends forbidden, 74, 78; purposes of issue, 79 n. 2; sale of stock at premium, 90, 98, 138; capitalization of reorganizations, 90; ratio of bonds to stocks, 141
- Mead, E. S., capitalization and rates, 14 n. 1, 17 n. 1 & 2; shares without par, 100 n.; basis of capitalization, 64 n. 1; payment of dividends out of premium-surplus, 120 n.; capitalization of Alton surplus, 176
- Mergers (*see* Consolidations)
- Meyer, Commissioner, publicity *versus* regulation of securities, 31
- Michigan Public Service Commission, stock dividends allowed, 78
- Michigan statutes, on purposes of issue, 79 n. 2
- Middlesex & Boston Rate Case (Mass. P. S. C.), 90 n. 1
- Miller, E. T., Texas Stock and Bond Law, 149 n.
- Missouri, Kansas & Texas, financial breakdown, 41
- Missouri Pacific, reorganization, 39; financial breakdown, 41; payment of unearned dividends, 51; improper accounting, 58*f*.
- Missouri Public Service Commission, basis of capitalization, 70*f*.; reorganizations, 89
- Missouri statutes, on purposes of issue, 79 n. 5; capitalization of reorganizations, 83, 88*f*.
- Mitchell, S. Z., opposes security regulation, 30, n. 1
- Monkswell, Lord, stock watering by British railways, 61 n. 1
- Monopoly, effect of capitalization on rates charged under, 17*f*.
- Moody, W. F., Jr., shares without par, 100 n.
- Morawetz, V., shares without par, 100 n.
- Moretz *v*. Edison Electric Illuminating Co. of Brooklyn (N. Y. P. S. C. 1st Dist.), 158 n. 2
- Mulvey, T., shares without par, 100 n.

N

- National Association of Railway Commissioners, discussion on security regulation, 14 n. 1, 28; shares without par, 100 n.
- Nebraska statutes, on purposes of issue, 79 n. 2; ratio of bonds to stocks, 141
- New England railways (*see also* Boston & Maine, and New York, New Haven & Hartford), breakdown of service, 39*f*., 152
- New Hampshire Public Service Commission, stock dividends, 75 & n. 2; basis of capitalization, 75 & n. 2 & 3, 85

- New Hampshire statutes, stock dividends forbidden, 74*f.*, 78; purposes of issue, 79 n. 2; shares without par, 102, 105, 127
- New Hampshire Supreme Court, basis of capitalization, 75 n. 2, 85
- New Haven Railroad (*see* New York, New Haven & Hartford)
- New Jersey Board of Public Utility Commissioners, stock dividends allowed, 78 & n. 1, 81 n. 1; ratio of bonds to stocks, 142 n. 1 & 2; allowance of higher rates to uphold credit, 168
- "Newlands Committee" *Hearings*, causes of railway failures, 43 n. 1
- Newton Gas & Electric Co., *Re* (N. J. P. U. C.), 158 n. 2
- New York Bar Association, committee, recommends law permitting issuance of shares without par, 100 n., 101*f.*, 125
- New York Central & H. R. R. R. & Rochester & Eastern Rapid Ry. Co., *Re* (N. Y. P. S. C. 2nd Dist.), 100 n., 103 n. 2
- New York Court of Appeals, basis of capitalization, 71*f.*
- New York, New Haven & Hartford, financial breakdown, 34, 39 & n. 2; payment of unearned dividends, 51; plea for higher rates, 163
- New York & North Shore Traction Co., *Re* (N. Y. P. S. C. 1st Dist.), 69 n. 3
- New York Public Service Commission, First District, New York City street railway reorganizations, 40; basis of capitalization, 68, 71*f.*, 90; discretionary powers, 133 n. 4; ratio of bonds to stock, 142 n. 1
- New York Public Service Commission, Second District, basis of capitalization, 70*f.*, 83*f.*, 90; purposes of issue, 78-80, stock below par, 94 n. 3; shares without par, 103; allowance of higher rates to uphold credit, 168
- New York statutes on purposes of issue, 78-80, 133 n. 3; stock dividends forbidden, 78-80; capitalization of reorganizations, 83, 88*f.*; stock below par, 94 n. 3; ratio of bonds to stock, 142 n. 1; shares without par, 102*f.*, 114, 115, 119 n. 1, 121-24, 127
- New York street railway system, poor service and overcapitalization, 40
- No-par share (*see* Shares without par value)
- Notes, short term, not subject to approval of Interstate Commerce Commission, 133
- O
- Ohio Public Service Commission, stock dividends allowed, 78
- Ohio statutes, on purposes of issue, 79 n. 5; shares without par, 102, 105, 123, 127
- Oregon Public Service Commission, capitalization and fair value, 158 n. 2; allowance of higher rates to support credit, 168
- Original investment as basis of capitalization, 74-77, 98
- Overcapitalization (*see* Capitalization, *also* Stock watering)
- P
- Pacific Gas & Electric Co., application to issue stock dividend, 70
- Pacific Gas & Electric Co., *Re* (Cal. R. C.), 104 n. 2
- Par value (*see also* Capitalization and Shares without par value), source of deceit to investors, 52*f.*; influence on market values, 50-57; shares without, Ch. IV, 135-39; stock issuance below, 72 n. 2, 93-95, 135; issuance above, 135-37
- Participation certificates without par value, 101*f.*, 106 n.
- Penn Central Light & Power Co., shares without par, 105 n. 3
- Pennsylvania Public Service Commission, allowance of higher rates to support credit, 168
- Pennsylvania Railroad, reinvestment of earnings, 148
- Pennsylvania statutes, ratio of bonds to stocks, 141; shares without par, 102, 104, 123 & n. 1, 127

- People *ex. rel.* the D. & H. Co. v. Stevens (N. Y. Ct. App.), 71 n. 1
 Pere Marquette, payment of unearned dividends, 51, 58; improper accounting, 58
 Physical value of American railways, 24 & n. 1, 92*f.*
 Piper, J., shares without par, 104 n. 4
 Portland Railway, Light & Power Co., *Re* (Ore. P. S. C.), 158 n. 2
 Potts, C. S., Texas Stock & Bond Law, 149 n.
 Powell, F. W. & Cleveland, basis of capitalization, 64
 Preferred stocks, effect of over-issue on railway credit, 48*f.*; use of by railways and utilities, 49; without par value, 102, 127-29, 131
 Premiums, sale of shares at, 95-7, 118*f.*
 Price of issuance, control of, 95-97, 134-39
 Profits, concealment of by stock watering, 23, 55, 96*f.*
 Promoters, false statements by, 57; profits to, in case of stock without par value, 116-18, 137 n. 2
 Prouty, Commissioner, capitalization as factor in rate cases, 159*f.*; on plea for higher rates to support credit, 163
 Public Service Commission (*see* Commissions, public service)
 Public Service Electric Co., permission to raise rates to support credit, 168 & n. 7
 Public utilities, local, effect of capitalization on rates, 18
 Public Utilities Reports, Annotated, 11
 Publicity *versus* regulation of securities, 10, 30*f.*, 59-61
 Puget Sound extension, finance, 59
 Purposes of issue, state laws on, 78-80; federal law, 133*f.*

R

- Railroad Commission of Texas v. Atcheson, *etc.* (I. C. C.), 160
 Railroad Securities Commission, United States, recommends publicity rather than security regulation, 30; distinction between stocks and bonds, 46, 64 & n. 3; opposes stock dividends, 82; warns against overissue of bonds, 47 n. 2, 94 n. 1; recommends shares without par, 100 n., 103, 110-12, 129
 Railway Age Gazette, breakdown of four railways, 41; Alton case, 169 & n. 3
 Rate-making value, as basis of capitalization, 67-73, 90
 Rate regulation, capitalization as factor in, 20-38, App. A & B; as cause of railway failures, 41*f.*; British and American methods compared, 138 n. 1, 140 n. 1; need of liberal policy to permit financing by stock issues, 140*f.*; use of to compel reorganization of weak roads, 151
 Rate of return, effect of capitalization on, 31-38; "fair rate" *versus* "expedient rate," 31-36, App. B
 Rates, effect of capitalization on (*see* Capitalization and rates)
 "Reasonable rates," 20-35
 Receiverships, miles of road in, 42
 Regulation (*see* Rate regulation, *also* Security regulation)
 Reorganizations, as alternatives to rate increases, 38; funds for rehabilitation, 39; as means of equating capitalization and assets, 93; reduction of debt through, 47; use of preferred stocks and income bonds in, 49, capitalization of, 83, 88-90, 134*f.*; advantage of shares without par value in, 109-11
 Replacement cost, as basis of rate-making value, 24; as basis of capitalization, 66*f.*, 69, 76, 90
 Richmond Light, Heat & Power Co., *Re* (Ind. P. S. C.), 158 n. 2
 Ripley, E. P., Texas Stock & Bond law, 149 n.
 Ripley, W. Z., 11; evils of over-capitalization, 13 n. 1; New York street railway finance, 40; basis of capitalization, 64 n. 1; Rock Island finance, 114; shares without par, 100 n., 113, 115 n. 1, 118; principles of security regulation, 135; control of issuance

price in Massachusetts, 138 n. 2; security regulation in Texas, 149 n.; Alton case, App. C
 Rock Island (*see* Chicago, Rock Island & Pacific)
 Roemer, Commissioner, capitalization and rates, 28; shares without par, 104 n. 1

S

Sague, Commissioner, basis of capitalization, 84
 St. Louis & San Francisco, overcapitalization, 33; rehabilitation expenses, 39; financial breakdown, 41; payment of dividends prior to receivership, 48; receipt of excessive dividends from C. & E. I., 51; reorganization, 89 n. 1; need for higher taxes to support credit, 163
 St. Louis & S. F. R. R. Co., *Re* (Mo. P. S. C.), 70 n. 2, 89 n. 1
 San Joaquin Light & Power Corp., *Re* (Cal. R. C.), 168 n. 2
 Scaling down of excessive capitalization, 91-93, 146-53
 Schaff, Commissioner, security regulation in Massachusetts, 75 n. 1
 Seager, H. R., measure of value, 179 & n. 1
 Secrecy, an accompaniment of stock watering, 22-25, 57-61
 Securities (*see* Stocks, *also* Bonds and other evidences of debt)
 Securities Commission (*see* Railroad Securities Commission)
 Security regulation, bibliography, 186-94; publicity *versus* regulation, 10, 30f., 59-61; basis of capitalization, Ch. III; control of issuance prices, 95-97, 134-39; no-par shares not a substitute for, 127
 Seligman, E. R. A., 12
 Service, effect of capitalization on, 14, 38-43; need of stricter standards of, 151f.
 Shaffer Oil & Refining Co., shares without par, 105 n. 1
 Shares without par value (*see* Contents of Ch. IV), bibliography, 100 n.; as a solution of evils of stock watering, 10, 65; historical development, 100-06;

advantages, 106-11; alleged objections, 111-24; treatment on balance sheet, 118-24; not a substitute for security regulation, 57, 107, 124-27; inclusion of preferred stock, 127-29; optional or compulsory, 129f.; control of issuance price, 135-39; summary, 130f.
 Shepard, E. M., shares without par, 100 n.
 Smyth v. Ames (U. S. Sup. Ct.), 21f., 26f., 156-58, 160
 Snyder, Carl, capitalization and rates, 19 n. 1
 South Carolina, stock dividends forbidden, 74
 Speculation, possibilities of with no-par shares, 113-15
 Spokane Rate Case (I. C. C.), 27, 159
 Springfield Consolidated Water Co., *Re* (Pa. P. S. C.), 168 n. 4
 Springfield Gas Co. case (Mass. Gas Comm.), 75 n. 1
 State *versus* federal regulation of securities, 9, 11, 132
 Statutes, state (*see also* Federal regulation of securities) purposes of issue, 68, 78-80, stock dividends, 74f., 78; basis of capitalization, 74 & n. 2 & 3, 89f.; capitalization of reorganizations, 88f.; outstanding capitalization, 92f.; stocks below par, 94 & n. 3; shares without par, 102-05, 107, 114-16, 121-24, 127-29, 132-35
 Stetson, F. L., shares without par, 100 n., 102
 Stevens, Commissioner, basis of capitalization, 83f., 90; shares without par, 100 n., 103
 Stock dividends, objections to, 54f., 57, 126; state laws and commission decisions on, 67f., 74, 75 & n. 1, 77-82, 85; defense of, 81f., 139; not forbidden by federal law, 134; use in connection with no-par shares, 136, 139
 Stock watering, proposed remedies, 10; early criticisms of, 14-15; defense of, 15-16, 53 n. 1, 96f.; a method of concealing investment, 22-25, 48-63; less serious than overbonding, 45-48, 94;

- Alton as example, 55f. and App. C; Rock Island as example, 55f.
 Stocks (*see also* Capitalization and Shares without par value), control of issuance price, 90, 93-95, 138; stocks *versus* bonds, 46-48; ratio of to bonds, 141-46; common stocks, effect of overissue on credit, 49-57; preferred stocks, effect of overissue on credit, 48f.
 Strauss, F., capitalization and rates, 19 n. 1; basis of capitalization, 87
 Street railways, plea for higher rates, 35 n.; overcapitalization of, in New York City, 40
 Submarine Boat Corp., shares without par, 105 n. 1
 Surplus, capitalization of (*see also* Stock dividends), laws and decisions regarding, 74 f., 77-82; arguments pro and con, 81f.; Alton case, 176f.

T

- Texas Railroad Commission, capitalization of Texas railways, 92f.; scaling down of outstanding issues, 98, 148-50
 Texas Stock and Bond Law, 92f., 148-50
 Thelan, Commissioner, causes of railway failures, 43 n. 1
 Third Avenue Railway, overcapitalization, 40 & n. 2; reorganization, 68f.
 Thom, A. P., causes of railway failures, 43 n. 1
 Thompson, R. A., Texas Stock & Bond Law, 149 n.
 Toledo, St. Louis & Western ["Clover Leaf"], control of Alton, 173 & n. 1, 174, 180, 182
 Toms River Electric Co., *Re* (N. J. P. U. C.), 81 n. 1
 Transportation Act of 1920, on security regulation, 9, 132-35, 143, 153f.; on rate of return, 21 & n. 1; on protection of credit as factor in rate making, 165 n. 2
 Trolley lines, plea for higher rates, 35 n.; financial breakdown in New York, 40

U

- Undercapitalization, 57; evils of, 95-97
 Undervaluation of assets, 95 & n. 1
 Union Pacific, control of Alton by, 56, 173f.
 United Retail Stores Corp., shares without par, 105 n. 1
 United States Congress, debates on stock watering, 9; reports of committees on security regulation, 192f.
 United States Industrial Commission, *Report*, relation of capitalization to rates, 14 n. 1, 19 n. 1; basis of capitalization, 64 n. 1
 United States Railroad Securities Commission (*see* Railroad Securities Commission)
 United States Supreme Court, capitalization as factor in rate making, 26f., 256f.
 Utah statutes, ratio of bonds to stocks, 141

V

- Valuation for rate making, relation of capitalization to, 21-31, App. A; Texas railways, 92f.
 Van Metre, T. W., 12, 64 n. 1
 Vermont Public Service Commission, stock dividends permitted, 78
 Virginia statutes, shares without par, 102, 104, 124, 127
 Voluntary associations, issue of shares without par, 105 n. 3

W

- Wabash Railway, financial breakdown, 41
 Wang, C. C., British railway finance, 61 n. 1
 War, leniency of commissions during, 35, 167f.
 Washington statutes, ratio of bonds to Stocks, 59
 Watered stocks (*see* Stock watering)
 Westchester Street Railroad Co., *Re* (N. Y. P. S. C. 2nd Dist.), 64 n. 1, 83

- Western Power Corp. (of Calif.),
 shares without par, 103 n. 1,
 105 n. 3
- Western Rate Advance Case of
 1911, capitalization as factor in
 rate making, 160, 161 n. 3, 162
- White, F., shares without par,
 100 n., 101 n. 1
- Whitridge, Receiver, stock water-
 ing as cause of breakdown of
 New York street railways, 40
- Whitten, R. H., rate of return,
 31 n. 3 & 4; capitalization and
 fair value, 156 n. 1, 157, 158
 n. 2; financial control in Great
 Britain, 61 n. 1, 138 n. 1
- "Windom Committee," relation of
 capitalization to rates, 14, 17,
 19 n. 1
- Wisconsin Railroad Commission,
 stocks below par, 94 n. 3; shares
 without par, 104; discretionary
 powers of commission, 133 n. 4;
 going-value, 71
- Wisconsin statutes, on purposes
 of issue, 79 n. 5; reorganization,
 88; stocks below par, 94 n. 3;
 ratio of bonds to stocks, 142
- Wood, W. A., basis of capitaliza-
 tion, 64
- Worcester, E. P., capitalization and
 rates, 15
- Worcester Gas Light Co. case
 (Mass. Gas Commis.), 75 n. 1
- Wyman, B., rate of return, 31 n.
 3; capitalization and fair value,
 156 n. 1, 157

Y

- Young, A. A., 12; evils of stock
 watering, 52 n. 1

2

AMERICAN APPRENTICESHIP AND
INDUSTRIAL EDUCATION

STUDIES IN HISTORY, ECONOMICS AND PUBLIC LAW

EDITED BY THE FACULTY OF POLITICAL SCIENCE
OF COLUMBIA UNIVERSITY

Volume XCV]

[Number 2

Whole Number 216

**AMERICAN APPRENTICESHIP AND
INDUSTRIAL EDUCATION**

BY

PAUL H. DOUGLAS, PH.D.

*Assistant Professor of Labor Administration
The University of Chicago*



New York
COLUMBIA UNIVERSITY
LONGMANS, GREEN & CO., AGENTS
LONDON: P. S. KING & SON, LTD.

1921

COPYRIGHT, 1921

BY

PAUL H. DOUGLAS

To

DOROTHY W. DOUGLAS

TABLE OF CONTENTS

PAGE

PART I

AMERICAN APPRENTICESHIP: ITS BACKGROUND, DEVELOPMENT AND DECAY

CHAPTER I

Apprenticeship and its Relation to Industrial Education 11

CHAPTER II

American Apprenticeship Prior to the Factory Period 25

CHAPTER III

The Decline of Apprenticeship in the Machine Era. 53

PART II

JUVENILE LABOR AND THE EDUCATIONAL REQUIREMENTS OF MODERN INDUSTRY

CHAPTER IV

Present Conditions of Children in Industry 85

CHAPTER V

What Education is Needed for Modern Industry 109

CHAPTER VI

The Problem of Vocational Education for Women	132
---	-----

PART III

MODERN SUBSTITUTES FOR APPRENTICESHIP

CHAPTER VII

Manual Training	176
---------------------------	-----

CHAPTER VIII

Trade and Industrial Schools	187
--	-----

CHAPTER IX

Training of Employees by Plants	211
---	-----

CHAPTER X

Evening and Correspondence Schools	229
--	-----

CHAPTER XI

Coöperative and Continuation Schools	244
--	-----

CHAPTER XII

Vocational Guidance	269
-------------------------------	-----

PART IV

SOCIAL ASPECTS

CHAPTER XIII

The Smith-Hughes Act and Federal Aid for Vocational Education.	293
--	-----

CHAPTER XIV

The Economic Aspects of Industrial Education	307
--	-----

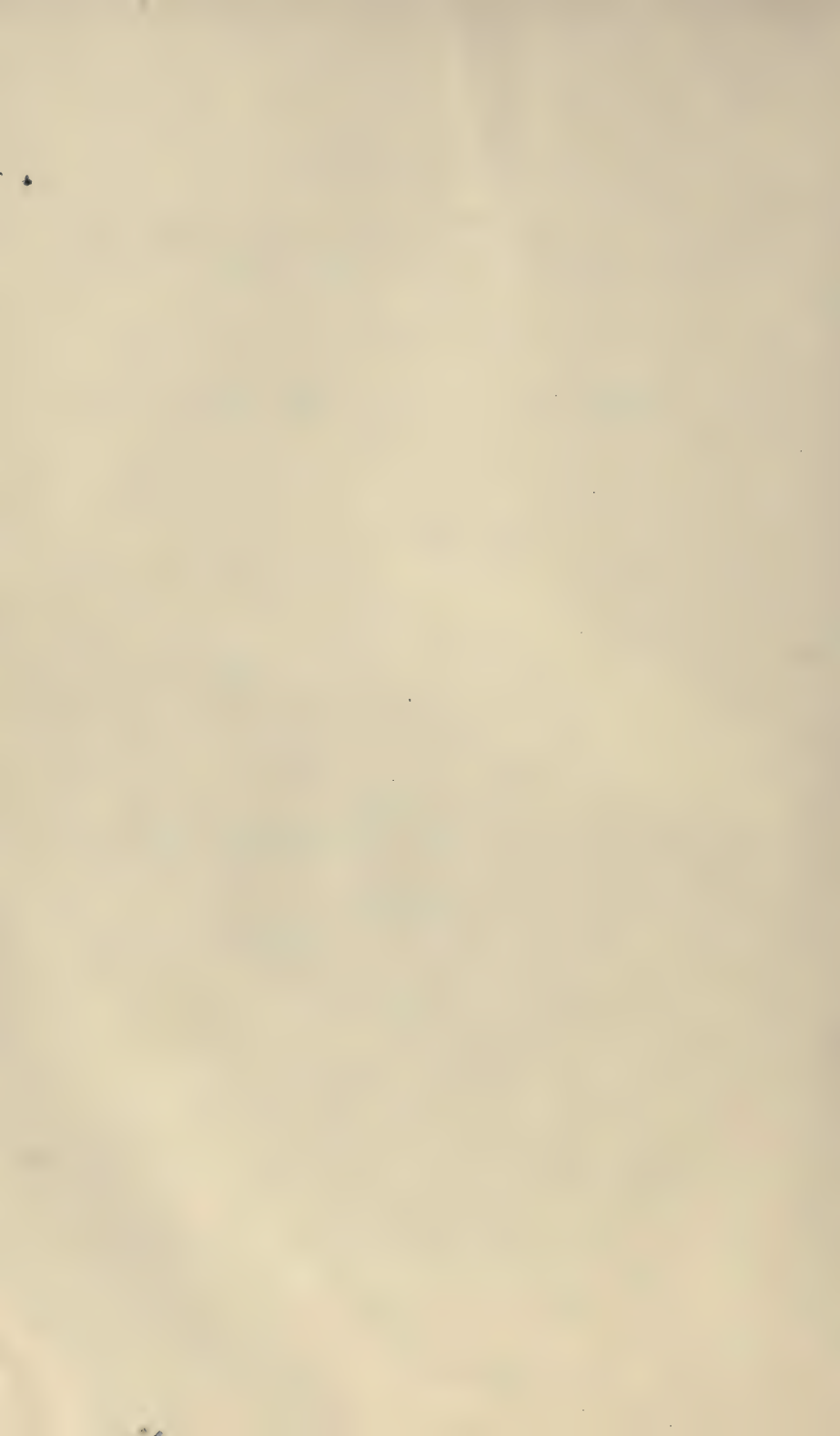
CHAPTER XV

The Attitude of Labor and Capital Towards Industrial Education . 315

CHAPTER XVI

A Program 331

Bibliographical Note 340



CHAPTER I

APPRENTICESHIP AND ITS RELATION TO INDUSTRIAL EDUCATION ¹

PERHAPS the most important educational movement of the past decade has been that of industrial education. The cause lies in the failure of the workshop to provide proper industrial training for its young employees. In order to understand the present educational situation, therefore, it is imperative to examine the roots from which it has grown, namely, the old system of apprenticeship that formerly provided broad training for the young workers of this country. The problem is not alone educational, but is economic as well and can only be understood by studying it from both aspects.

1. *Definition.* ✓ Apprenticeship is essentially a combination of education and industry. It is a process of learning by doing, under which a minor is taught the art of a trade by one who is at the moment engaged in it; the minor paying either in whole or in part for this instruction by the work done on objects destined for the master's consumption or sale. ✓

This is a sufficient definition of an institution that was the chief means of trade education until the advent of the machine era. The apprentice differs from the ordinary child laborer in that he not only works for his master but receives instruction in his trade. Apprenticeship ceases when child labor degenerates from education to routine. Since now the shop no longer trains the child worker, other agencies must be created to assume the responsibility.

Apprenticeship can exist, either with or without a legal in-

¹ This chapter originally appeared in the *Pedagogical Seminary* for March, 1918.

denture. In its essence it is a contractual relationship between boy and master, involving an exchange of work for education. The indenture is merely the legal instrument bearing witness to this relationship. The contract itself may be held binding in the absence of any written agreement whatsoever. For instance, a Connecticut court has held that a boy who lived to the age of twenty-one with a mechanic, learning the trade under parole agreement, was an apprentice though there were no articles of indenture existing between the two.¹ Other decisions have been made supporting this view.² In fact, many of the firms that now have apprenticeship systems do not have formal written indentures binding the two parties, but allow a continuance of the relation upon the pleasure of both. It goes without saying, however, that though the indenture is not synonymous with apprenticeship, it is very valuable as a means of giving needed fixity and definiteness to a relation that might otherwise become too lax.

2. *Origin and extent.* Apprenticeship originated far earlier than is commonly supposed. The popular belief is that it had its inception in the handicrafts of the medieval European town, crystallising in the regulations of the craft guilds. No writer upon economic history, in fact, has placed its beginnings further back than this period. Adam Smith declared: "Apprenticeships were altogether unknown to the ancients. I know of no Latin or Greek word (I might venture, I believe, to assert that there is none) which expresses

¹ *Huntington v. Oxford*, 4 Day, 189 (1810).

² *State v. Jones*, 16 Fla. 306. See *Niles Register*, vol. lix, p. 336 (1840), where record is made of a similar decision by which a boy was sent back to his master, though no written agreement existed. See also H. G. Wood, *A Treatise on the Law of Master and Servant*, p. 52: "When the parties to a contract are bound thereby, one to teach and the other to learn and serve at a certain trade or business, it is a quasi contract of apprenticeship, whether in writing or by parole."

the idea we annex to the word, Apprentice.”¹ This statement by Smith has been freely accepted by writers upon economic history and industrial education. The *Encyclopedia Britannica* says: “So far as it can be seen, it (apprenticeship) arose in the middle ages, and formed an integral part of the system of trade guilds and corporations.”² Recent works upon the subject contain similar statements. One declares that “the modern apprenticeship system has its origin in the medieval handicraft work;”³ another that “the apprenticeship system took its rise in medieval handicraft work.”⁴ Many similar citations could be given.⁵

As a matter of fact the history of apprenticeship does not stop here. Traces of it are found in the very dawn of civilization. The Babylonian Code of Hammurabi (2100 B. C.) recognizes and regulates apprenticeship in the following terms: “If an artisan take a son for adoption and teach him his handicraft, one may not bring claim against him. If he do not teach his handicraft, that adopted son may return to his father’s house.”⁶ Aside from proving once more that there is nothing new under the sun, this voice from the past is significant in several respects. In the first place, the fact of codification proves that apprenticeship was even then in an advanced state of development and had probably already existed for a considerable period of time. Secondly, it appears that the status of master and apprentice was that of father and son, a blood fiction being created. The term of apprenticeship, furthermore, lasted apparently

¹ Smith, *The Wealth of Nations* (Cannan edit.), vol. i, p. 124.

² 1910 edition, vol. ii, p. 229.

³ J. L. Taylor, *A Handbook of Vocational Education*, pp. 138-139.

⁴ *Bulletin 19*, U. S. Bureau of Education, 1913.

⁵ Among these may be cited, Labatt’s *Master and Servant*, vol. vi, p. 6384.

⁶ *The Code of Hammurabi* (Harper trans.), p. 74, rules 188-189.

denture. In its essence it is a contractual relationship between boy and master, involving an exchange of work for education. The indenture is merely the legal instrument bearing witness to this relationship. The contract itself may be held binding in the absence of any written agreement whatsoever. For instance, a Connecticut court has held that a boy who lived to the age of twenty-one with a mechanic, learning the trade under parole agreement, was an apprentice though there were no articles of indenture existing between the two.¹ Other decisions have been made supporting this view.² In fact, many of the firms that now have apprenticeship systems do not have formal written indentures binding the two parties, but allow a continuance of the relation upon the pleasure of both. It goes without saying, however, that though the indenture is not synonymous with apprenticeship, it is very valuable as a means of giving needed fixity and definiteness to a relation that might otherwise become too lax.

2. *Origin and extent.* Apprenticeship originated far earlier than is commonly supposed. The popular belief is that it had its inception in the handicrafts of the medieval European town, crystallising in the regulations of the craft guilds. No writer upon economic history, in fact, has placed its beginnings further back than this period. Adam Smith declared: "Apprenticeships were altogether unknown to the ancients. I know of no Latin or Greek word (I might venture, I believe, to assert that there is none) which expresses

¹ *Huntington v. Oxford*, 4 Day, 189 (1810).

² *State v. Jones*, 16 Fla. 306. See *Niles Register*, vol. lix, p. 336 (1840), where record is made of a similar decision by which a boy was sent back to his master, though no written agreement existed. See also H. G. Wood, *A Treatise on the Law of Master and Servant*, p. 52: "When the parties to a contract are bound thereby, one to teach and the other to learn and serve at a certain trade or business, it is a quasi contract of apprenticeship, whether in writing or by parole."

the idea we annex to the word, Apprentice.”¹ This statement by Smith has been freely accepted by writers upon economic history and industrial education. The *Encyclopedia Britannica* says: “So far as it can be seen, it (apprenticeship) arose in the middle ages, and formed an integral part of the system of trade guilds and corporations.”² Recent works upon the subject contain similar statements. One declares that “the modern apprenticeship system has its origin in the medieval handicraft work;”³ another that “the apprenticeship system took its rise in medieval handicraft work.”⁴ Many similar citations could be given.⁵

As a matter of fact the history of apprenticeship does not stop here. Traces of it are found in the very dawn of civilization. The Babylonian Code of Hammurabi (2100 B. C.) recognizes and regulates apprenticeship in the following terms: “If an artisan take a son for adoption and teach him his handicraft, one may not bring claim against him. If he do not teach his handicraft, that adopted son may return to his father’s house.”⁶ Aside from proving once more that there is nothing new under the sun, this voice from the past is significant in several respects. In the first place, the fact of codification proves that apprenticeship was even then in an advanced state of development and had probably already existed for a considerable period of time. Secondly, it appears that the status of master and apprentice was that of father and son, a blood fiction being created. The term of apprenticeship, furthermore, lasted apparently

¹ Smith, *The Wealth of Nations* (Cannan edit.), vol. i, p. 124.

² 1910 edition, vol. ii, p. 229.

³ J. L. Taylor, *A Handbook of Vocational Education*, pp. 138-139.

⁴ *Bulletin 19*, U. S. Bureau of Education, 1913.

⁵ Among these may be cited, Labatt’s *Master and Servant*, vol. vi, p. 6384.

⁶ *The Code of Hammurabi* (Harper trans.), p. 74, rules 188-189.

But not only is the institution of apprenticeship much older than is commonly imagined it was also more universal. It was as much a part of the far eastern system of handicraft as it was of western Europe. Mr. Coomaraswamy's translation of an ancient Sinhalese potter's song describing in poetic language the operations which apprentices were to perform, reveals apprenticeship as firmly embedded in Indian handicraft,¹ while students of Chinese industry have pointed out the parallelism between oriental apprenticeship and that of medieval Europe together with the similar functions of guilds as regulatory and supervisory bodies.²

That apprenticeship is of ancient origin and almost universal extent should not, however, excite much surprise, for it is obviously the normal correlative of handicraft labor. Whenever industry has developed beyond the family as a self-sufficing entity, separate trades arise from which the artisan must derive the whole or a part of his living. The growth of the industry must in many cases entail more work than can be done by the sons alone. Other boys must be taught the trade, not only to insure enough skilled workmen, but also in some cases to provide continuity in its management. The inevitable result is apprenticeship.

3. *Applies to professions as well as trades.* ✓ The system of apprenticeships has been used to prepare men for all forms of industrial and professional work, not for the manual crafts alone.³ It cannot be repeated too often

¹ *Spolai Zeylanica* (see especially vol. iv, pts. xiv and xv) translated by A. K. Coomaraswamy 1906. For an interesting description of Indian industry and the plan of apprenticeship see Mr. Coomaraswamy's *Medieval Sinalese Art*.

² See among others H. B. Morse, *The Gilds of China*, 1908.

³ Among the Greeks there was no distinction between what we now designate as trades, crafts, arts, and professions. All alike were given the same name: *Techne*.

that apprenticeship is basically a process of learning by doing.¹ It is a higher form of the trial-and-error process, containing a large amount of imitative motion. As such, it quite naturally antedates all theoretical instruction.

The avenue of entrance to all professions formerly lay through apprenticeship. Until recent years lawyers were almost predominantly trained in law offices by practising attorneys.² Even to-day, despite the multiplicity of law schools, many attorneys are educated by this purely "prentice-like" practise.³ Dentists and doctors have in the past been trained by similar methods. Indeed, as Mr. Flexner points out, English medical schools are but an outgrowth of the pooling of apprentices whom individual doctors have taken with them in their rounds through the hospitals.⁴

As medieval universities were controlled either by guilds of students or by guilds of teachers, graduation from the student ranks meant at first only entrance into the rank of teacher. Just as the medieval silversmiths, coopers, and other craftsmen were compelled to produce a "master-piece" as evidence that they had successfully completed their apprenticeship and were qualified to become full-fledged journeymen, so too was the student compelled to procure his original piece of work for graduation. The dissertation of the modern doctor of philosophy is but a vestigial remain of this custom.

¹ The educational nature of apprenticeship is seen from the French and German equivalents of the term. The French word is *apprentissage*; the German, *lehrzeit*, springing respectively from the stems, *apprendre* and *lehren*, to learn and to teach.

² See Redlich, *The Case Method in American Law Schools* (Carnegie Foundation), p. 7.

³ *Ibid.*, p. 7.

⁴ *The Atlantic Monthly*, Oct., 1915, p. 528.

Chivalry itself was but a species of handicraft. A boy having served seven years as page and seven years as squire was then admitted with attendant ceremony to the rank of knight. These steps were perfectly analogous to the stages of apprentice, journeyman, and master craftsman, through which the artisan passed.

In recent times pedagogy has also been taught by the method of apprenticeship. In 1846 the pupil-teacher system was introduced into the London schools to succeed the Lancastrian or monitorial system. Boys and girls were apprenticed to the head teacher, assisted him in his work, received instruction (which was generally given at the breakfast hour), and were paid a small but increasing wage for their labor. This practice was plainly nothing but apprenticeship. The teacher-apprentices were supposed to be no less than thirteen years of age; in many case they were still younger. The London County Council, in 1875, wishing to reform the situation, stipulated that no pupil-teachers would be accepted who were less than fourteen. In 1869 there were two apprentices for every teacher. This indicates that the teaching profession was not only poorly manned, but that apprentices could not be sure of final opportunity to serve as full-fledged teachers. Even in London to-day the art of teaching is imparted in this fashion. The relative number of apprentices has, however, decreased. In 1904 the ratio was one apprentice to every four masters, while the instruction formerly given by individual masters is instead given in normal schools.¹

Though apprenticeship has been the generic form of education for all these professions, the old imitative, empirical method of education has been largely or wholly replaced by school training. Whenever a trade, craft, or profession has developed to such a stage that general principles

¹ *Final report*, London School Board, 1870-1904, pp. 138-146.

and scientific causation can be abstracted from personal contact, then apprenticeship as the sole or chief method of training for that occupation declines. That which was an art becomes a science with more or less fixed rules and a generalized method of procedure. In our day, we have seen schools of finance and administration invade the art of business management, promising to revolutionize the functions of the entrepreneur and make business a science.

Will this movement from the system of apprenticeship to school training, which has been so characteristic of the professions, take place in the manual arts as well? Will brick-laying and carpentry be taught in the schools in the future as medicine and law are now, rather than on the job? This question is indeed an open one, but as we shall see it is extremely doubtful if the school can ever replace the shop as the chief method of training manual workers. Even in the professions abstract instruction alone has been found inadequate; young lawyers must become clerks in offices; doctors must serve as internes in hospitals. In industrial pursuits the case for shop training appears even stronger. The content of the various trades cannot easily be given elsewhere than in the industry itself.

4. *Apprenticeship a preparation for life as well as for industry.* Another function of apprenticeship is the development of character and good citizenship. Originally it was a preparation for life, not a preparation for technical pursuits alone.¹ The English guilds formerly acted as the moral and educational supervisors of the apprentice—among other things, in some cases requiring church attendance,—and this

¹ See R. A. Bray's view of the essence of apprenticeship—"Originally the term apprenticeship was employed to signify not merely the practical training in the mysteries of a trade, but also that wider training of character and intelligence on which depends the real efficiency of the craftsman." *Boy Labour and Apprenticeship*, p. 1.

theory of the social nature of apprenticeship existed long after the gild form of organization decayed. Peel's child labor law of 1802 was entitled, "An act for the preservation of the health and morals of the Apprentices and others employed in cotton and other mills and cotton and other factories."¹ This law stipulated that educational training should be given every day with religious instruction "one hour every Sunday."

The apprenticeship regulations of the colonies furnish ample proof that this conception of apprenticeship held in America as well as in England. The statutes of many of the colonies provided that the apprentice should be taught to read and write, should be given biblical instruction (Massachusetts compelling church attendance), and that the master must be a moral man. Should the master violate any of these provisions, the apprentice was to be freed from his contract. The system was designed, in so far as the isolated life of the times permitted, to prepare the apprentice for society, as well as for his trade. Nor should it be forgotten that the state assumed supervision over the apprentice until he reached the age of twenty-one, in some cases, twenty-four. At the present time the states, with few exceptions, disclaim any responsibility for the child over fourteen. In our far more complex life with its many dangers to adolescence, we are turning children loose from seven to ten years earlier than in colonial times.

5. *A transition stage between servitude and freedom.* Apprenticeship has frequently resulted in a semi-servile status which contrasts curiously with its protective features. The relation of the apprentice is at best a dependent one, and in primitive states of society it may readily take on some of the aspects of slavery. Among many of the Southern

¹ 42 Geo. III, c. 87.

colonies, notably Virginia and South Carolina, the same laws were made applicable to negro slaves and to white apprentices.¹ A study of the methods by which the various states manumitted the slaves within their jurisdiction, shows that apprenticeship was a half-way stage between slavery and complete freedom. In the slow social evolution which the Pennsylvania negro experienced, he passed through the stage of apprenticeship on his way to freedom. The abolition act of 1780 commuted slavery to a term of apprenticeship under the old masters of the former slaves.² New Jersey and Illinois followed a similar plan.³

A parallel proposal was made by the Prussian landowners when the "hereditary subjection" was about to be removed. Cuba, in freeing her slaves, pursued an identical policy.⁴ When England freed her slaves in 1831, the colonial government re-committed the freedmen in the West Indies to a term of apprenticeship, owners being metamorphosed into masters. The evils that followed the creation of this new status were every whit as bad as those of the previous era. Men and women were flogged to death, and the barbarous cruelties that were practised show that slave discipline was as active and as powerful under apprenticeship as under slavery.⁵

¹ See Henning, *Virginia Statutes*, vol. iii, pp. 446-47, "An Act Concerning Servants and Slaves."

² See E. R. Turner, *The Negro in Pennsylvania*, pp. 89-108.

³ The New Jersey act of 1846 simply substituted apprenticeship for slavery. See H. S. Cooley, *A Study of Slavery in New Jersey*, pp. 28-31. The census of 1850 enumerates several hundred New Jersey blacks who were legally "apprentices." For the process in Illinois see N. D. Harris, *The History of Negro Servitude in Illinois*, pp. 6-103.

⁴ H. H. S. Aimes, "Transition from Slave to Free Labor in Cuba," *Yale Review*, vol. xv, pp. 68-84.

⁵ William Bevan, *Operation of the Apprenticeship System of the British Colonies* (published in 1837), pp. 35, ff, gives a striking account of the system.

It is very interesting to note that Abraham Lincoln, during his first term in Congress, introduced a bill for the freeing of the slaves in the District of Columbia, that provided a temporary system of apprenticeship for them.¹ It was indeed the enactment of apprenticeship codes by some of the southern states after the Civil War² (codes which provided for a more or less permanent semi-servile status of the newly-freed negro) that was the immediate cause of the harsh measures of reprisal undertaken by the North upon the South. The leaders of the radical northern movement charged that slavery was being set up again in the South under a different guise.³ Whether many of these nominal "apprentices" received the training necessary to continue bona-fide apprenticeship is, of course, extremely doubtful. The legal fiction of apprenticeship was however maintained.

The reasons for this curious use of apprenticeship are simple. It is dangerous for the slave to be suddenly transposed from slavery to freedom. The freedman is disposed to idle away his time. This means the disorganization of the working force of the former master. The former owners moreover feel that they are entitled to compensation. If money is denied them, they claim further service from their former slaves.

6. *Legal Theories.* The legal theories of apprenticeship have naturally changed with the successive forms of its constitution. In Babylon, as we saw, the relation of master and apprentice was that of father and son—apparently a relation of permanence. All the potential harshness of the

¹ Strunsky, *Abraham Lincoln*, p. 68.

² Notably Alabama, Louisiana, and Mississippi. For a southern account, showing the alleged necessity for a more permanent labor force, see Hilary A. Herbert's *Why the Solid South?*

³ See, for instance, James G. Blaine's *Twenty Years in Congress*, vol. ii, pp. 94-103.

patria potestas (to use an anachronism) accompanied this relationship. By the time of Roman Egypt, apprenticeship had developed into a contractual state of fixed stipulations under which the apprentice received a money reward as well as instruction. He became, in a word, a wage-earner. This change of status weakened the concept of filiality. In the Middle Ages apprenticeship became a matter for corporate control upon the part of the guilds. The master had now become the temporary guardian, not the parent, of the apprentice. But though the apprentice is not the property of the master, his term of service is. The unexpired serving time of the apprentice is often an economic asset of the master and could, under certain conditions, be sold or bequeathed. This constitutes property in time if not in persons.

(With the coming of the machine era, the length of the period of service was shortened.) Industry did not now require protracted service on the part of any individual. Master and apprentice now stand more in the capacity of friends who can terminate their relation at pleasure. Two main tendencies appear in this development: (1) The movement from a personal to an impersonal basis, (2) the decrease in length of service, beginning with a lifetime and ending in some cases with but a few months.

7. *Universality of problem.* The problems presented by the decadence of apprenticeship are not peculiar to America alone. Great Britain has seen child labor robbed of its former educative qualities, and become largely routine drudgery. France, after abolishing the guilds in 1791, felt the need of skilled training, and some of the best analytical studies of modern industry have resulted from her knowledge of that need.¹ Germany as we all know, met the

¹ Some of the more important recent studies are: Charles Berteaux, *La Crise de l'Apprentissage en France* (1909); Gustav Dron, *Pro-*

problem better than any other nation. She accomplished this through her perpetuation of the guilds as the supervisors of trade education and through her system of compulsory attendance in continuation schools. Italy and Switzerland have experienced the same difficulty. Industrially backward countries, such as Austria,¹ and countries newly inducted into the machine process, like Japan, face parallel situations.

Wherever the old hand process has given way to machinery, wherever the division of labor has been greatly extended, there the old system of apprenticeship has broken down. With it the training of the boy in industry, both for the industry and for life itself, becomes more and more difficult. The problem of the future is to devise a system which will modernize the good features of the former system and add to them merits which it did not formerly possess.

position de loi sur l'organization de l'apprentissage, par les cours professionnel (1911) ; Constant Verlot, Rapport fait au nom de la commission du commerce, et de l'industrie sur le projet et les propositions de lois relatif a l'enseignement technique industriel et commercial (1912). Also two governmental studies, *Rapport de l'apprentissage dans l'industrie de l'horlogerie* and *L'Apprentissage industriel*.

¹ See August Letwehr, "Die Lehrlingsfrage in der Grossindustrie," *Oesterreichische Rundschau*, vol. xxxvi, pp. 199-201 (1913).

CHAPTER II

AMERICAN APPRENTICESHIP PRIOR TO THE FACTORY PERIOD

THE colonial system of apprenticeship was not indigenous to American soil. Most of the colonists were Englishmen who brought to America the ideas and the institutions of their mother country. To understand American apprenticeship, we must, therefore, understand English apprenticeship, and note the similarities and differences between the two.

1. *The English Background.*

The celebrated Statute of Artificers in 1562¹ which is often regarded as the real starting-point of English apprenticeship, was merely the codification of the customary guild regulations and previous enactments.² What had hitherto been a local affair regulated by the craft guilds³ now became a national matter regulated by the central government according to uniform rules. Legislation concerning apprenticeship and craft regulation had been enacted for many decades before Elizabeth. It is to the credit of Elizabeth and her counsellors to have made of these scattered enactments a well-rounded system.

¹ 5 Eliz. C-4.

² For a good discussion of the purport and purpose of the statute, see Dunlop and Denman, *English Apprenticeship and Child Labor*, chap. iii, pp. 60-71.

³ For a suggestive description of apprenticeship as a form of education under the guilds see L. S. Lyon, "Medieval English Apprenticeship as Business Education," *School Review*, vol. xxvii, Oct., 1920, pp. 585-99.

The Statute was modelled chiefly upon the regulations of the London guilds. It bound the apprentice formally with a written indenture that was to be kept on record; it fixed his term at seven years (with the important provision that, if he bound himself before he was 17, his term in any case should not expire until he was 24), and it granted the right to take apprentices to householderes only. It is also interesting to note that it prohibited sons of countrymen from entering most of the trades, reserving this profitable field for the townsmen.

The Statute of Artificers was also designed as a system of poor relief.¹ It gave justices of the peace and officers of towns the power to bind out any unemployed person under twenty-one as an apprentice to a trade² or to a husbandry, provided that in the latter case the farmer to whom he was bound owned a minimum of half a ploughland in tillage. The technical value of these two forms of apprenticeship was of course very unequal. The craftsman was taught his trade, the husbandman merely worked for his master. By the poor law of 1601³ justices of the peace were given power to apprentice not only the children of paupers and vagrants but also the children of large families who it was thought would in the future become a burden to the state. Apprenticeship as a measure of poor relief had thus reached its widest possible scope.

¹For a contemporary view of the state of England see John Hales, *Discourse concerning the Commonwealth of this Realm* (edited by Miss Lamond, written in 1549. Pub. under initials W. S. in 1581.)

²See Scott, J. F., *Historical Essays in Apprenticeship and Vocational Education*, pp. 7-26, showing that apprenticeship was not the sole means of entering a trade, but that the rank of journeyman could be also obtained by patrimony and by purchase.

³43 Eliz. C. 2.

2. Colonial Need for Cheap Labor.

In the early days of the colonies their need for an adequate labor supply was very great. New land was being opened up, and there was a large demand for colonial products, especially tobacco. The agricultural system of Virginia was based on the plantation, which, unlike the New England farm, could not be worked by the family of the owner. A dependent class of laborers was therefore its necessary accompaniment. Later the manorial system of Maryland, and the large landed estates of New York demanded a similar class of labor.

England, on the other hand, had a surplus population. The development of the woolen industry and the sheep enclosures had dispossessed thousands of their former holdings.¹ Pauperism was on the increase, and the burden of poor support was becoming irksome to the parishes.

(With such a demand for labor upon the part of the colonies and with such a supply in England, emigration to the colonies was the natural consequence.) The problem was how to transport the poor, since ship passage was expensive and far beyond the means of those who desired to migrate. The simplest solution was indented servitude. This was apprenticeship divested of its educational opportunities. The servant in return for his transportation guaranteed to work for some master for a specified period of years.

Indented servitude was thus the Colonial analogue of the agricultural apprenticeship provided by the Statute of Artificers, and as such flourished chiefly in the great agricultural

¹The number affected by the sheep enclosures is a much-mooted question. Prof. E. F. Gay, who has made a detailed study of this point, believes that the number has been over-estimated and that it did not exceed 20,000, cf. Tawney, *The Agrarian Problem of the Sixteenth Century*.

areas of the South. Pennsylvania too, had its share of servants,¹ and the Dutch patroons with their extensive holdings absorbed a considerable number annually. With these two exceptions, however, the cases of agricultural indentures in the upper and middle tier of colonies were not as common as in the South.²

3. *Apprenticeship Compared with Industrial Servitude.*

It was difficult to distinguish between an apprentice and an indentured servant. Both were under contract to serve for a period of years, both were subject to the same regulations as regards running away and breaking their contract, and the same statutes were often applied to both classes. In popular speech they frequently served as interchangeable terms.³ The chief differences between the two classes may be summarized as follows:

(1) The apprentice was supposed to receive trade instruction, while the indentured servant was not. However, even here the popular confusion of terms was so great that we find many indentures specifying that the so-called "servant" is to be taught a trade. Obviously this is only apprenticeship in disguise.⁴

¹ K. F. Geiser, *Redemptioners and Indentured Servants in the Colony and Commonwealth of Pennsylvania*, Supp. *Yale Review*, vol. x, no. 2, August, 1901.

² Yet see in vol. xviii of *New York Historical Society Collections*, p. 571, where in 1696 Elizabeth Monis in consideration of her passage from England bound herself "to live as an apprentice with Captain Kidd for four years." Also in the *Acts of the Province of Mass. Bay*, vol. i, p. 634, an act passed Feb. 26, 1709, whereby "A bounty of forty shillings per head for male servants between 8 and 25 be given to anyone who would bring into the province one (a servant) from Great Britain."

³ See Franklin's *Autobiography*, p. 172 (Bigelow Ed.) where he speaks of George Webb, who was being taught the trade of printing and therefore was plainly an apprentice, as a "bought servant".

⁴ See *Record of Indentures of Individuals Bound Out as Apprentices*,

(2) The Colonies, as we shall see later, prescribed the rudiments of a liberal education for the apprentice, while they required nothing of the sort for the indentured servant. The practical result of this was that, as the servant could thus work all the time while the apprentice must be taught, the servant was the more sought after, and his service-time brought a higher price.

(3) Since apprenticeship primarily involved "learning," the apprentice was generally a minor, while the indented servant was usually an adult.

(4) The apprentice was generally a child born in the Colonies, while the indentured servant almost invariably came from abroad. This meant that the apprentice made out his indenture under the immediate supervision of the Colonial Government, while the servant often brought his with him from a foreign country.¹ Consequently the working relations of the servant were far harder to control.

(5) The unexpired serving-time of the indentured servant, like that of the slave, was transferable without the consent of the servant. Theoretically at least, according to English common law, the unexpired serving-time of the apprentice could only be transferred with the consent of the apprentice himself, although in practice this provision was violated many times.

Servants, etc., in Philadelphia (between 1771-73): This contains 51 cases where an ostensible servant was to be taught a trade. A typical one is as follows: John Sherman binds himself out as "a servant to be taught the art, trade, and mystery of a spinning wheel maker and have three quarters schooling," p. 5. Despite this term, this is nothing but apprenticeship. It is characteristic in showing the hazy lines of demarcation between apprentices and servants.

Conversely, some apprentices were indentured to learn the "art and mysteries of husbandry." However, farming was not such a science then as to justify the idea that these apprentices were actually given instruction. These so-called apprentices were really indented servants.

¹ This does not apply to the redemptioners who signed their indentures after landing.

4. *Classification of Indented Servants*

Analyzing the status of indented servitude somewhat more closely, we may say in general that it embraced two main categories—voluntary servitude and involuntary.¹ Each of these in turn has further subdivisions.

Voluntary servitude included (a) those men and women who sold themselves to a ship-master or other persons for a term of years in return for their passage, the ship-master in turn selling them to the highest bidder upon their arrival in the colonies, (b) the redemptioners or “free-willers” who, without selling themselves to the ship master, engaged passage and upon their arrival undertook to sell themselves into servitude. This latter class conducted their sale without the aid of the middle-man, the ship master. It was provided, however, that should the redemptioner fail to dispose of himself within a specified time (generally 30 days) and thus be unable to pay for his passage, the title to his services should revert back to the ship master, who could then dispose of him.

Involuntary servitude included four classes: (a) Children bound out as apprentices by English local authorities. For example, in 1619 100 poor London boys and girls were bound out for seven years to the Virginia Company by the mayor and council of London. Some of these apprentices were in turn disposed of by the company to independent planters.²

(b) Children and adults forcibly seized and transported to this country against their will. This importation of ser-

¹For slightly different classification see J. C. Ballagh, *White Servitude in Virginia*, pp. 33-4; (McCormack, *White Servitude in Maryland*, pp. 37-44). For a contemporary description of the kind of servants see Peter Kalm, *Travels into North America*, vol. i, pp. 387-390.

²J. C. Ballagh, *White Servitude in Virginia*, pp. 29-29.

vants proved such a profitable business that many traders were not satisfied with legitimate gains. In Virginia the serving time of a male servant would bring from 40 £ to 60 £.¹ Virginia and Maryland also gave bounties of fifty acres of land for each servant imported. The water-front men of England were a notoriously criminal set, and, beginning in the reign of Charles I, they began to kidnap children, put them on board vessels, and ship them to America, where they were sold into servitude. This practice was general up to 1670, and continued intermittently after that. The "spirits" as the kidnappers were called, excited a popular terror in England comparable only to the uproar aroused a few years ago over "white slavers."²

(c) Debtors. Disposing of one's person (or having it seized) to satisfy a debt had long been a common practice in England. Now the demands of the new country gave the practice a great impetus. Most of the indentures thus taken out were of course for servitude, but many were for apprenticeship also. Moreover, once arrived in the Colonies, a person falling into debt was liable to fresh indenture.³ Pennsylvania stipulated that debtors unable to pay charges against them should be sold into service.⁴ In Massachusetts the practice was so common and the evils so flagrant that

¹ *Ibid.*, p. 41.

² See P. A. Bruce, *Economic History of Virginia in the Seventeenth Century*, pp. 613-15.

³ *N. Y. Historical Society Collections*, vol. xlii. "Indentures of Apprentices," 1718-1727. Sept. 14, 1725. "This indenture witnesseth that Mary Van der Riper of the City of New York, spinster, in consideration of her being justly indebted unto Just Looy of the same place, cooper, in the sum of fifteen pounds, and having no other way to pay or satisfy the same than by servitude, hath put herself and by these presents doth put herself a servant to the said Just Looy to serve him and his assigns during the full end and term of four years next ensuing."

⁴ *Laws of Province of Pennsylvania*, 1728, p. 80.

the General Court in 1683 enacted that such pressure into service must be supervised by the proper legal authorities.¹

(d) Convicts deported from England to the colonies. This class was a most numerous one, but not nearly so dangerous as the term would indicate. The convict class included (1) Political criminals. The latter half of the 17th century was a tumultuous one in English politics. The civil wars, Penruddock's revolt against the Commonwealth in 1655, the Scotch Insurrection in 1666, the uprising of the West under Monmouth in 1685 and its bloody suppression by Jeffries, together with the Jacobite rebellion of 1715, all furnished their quota of prisoners who were despatched to the colonies for a term of years. Most of these prisoners were, to be sure, sent to the Barbadoes, but some were sent to New England² and a great many to the South. Sixteen hundred and ten Scotch prisoners, according to Ballagh, were sent to Virginia in 1651 after the battle of Worcester.³ (2) Civil Criminals. Large numbers of these were dumped upon America by the English authorities, and many sentences of death were commuted to deportation to the colonies. Though this class as a whole was not a good ingredient in the colonial population, yet it too, undoubtedly, included many decent individuals. The criminal code of England during the 17th and 18th centuries was notoriously severe, and inflicted heavy penalties

¹ *Records of Mass. Bay Colony*, vol. v, p. 415. During the latter half of the eighteenth century, forced service for debt was very generally changed throughout the colonies to imprisonment. Instead of selling a debtor into service, his creditor now threw him into jail. Imprisonment for debt was widely prevalent in the period 1810-1835. Cf. McMaster, *History of the People of the U. S.*, vol. iii, pp. 534-35. Also *Annual Reports of the Prison Discipline Society* (Boston), beginning with that of 1825.

² Especially those of the 1666 revolt.

³ Ballagh, *op. cit.*, p. 35.

for offenses which we should now class as mere misdemeanors.

Maryland was thickly infested with these "criminals" and one of her historians has estimated that at least 20,000 of them entered the colony before the Revolution, and that in the period 1750-1770 the annual importation of convicts was between 400 and 500.¹

5. *Conditions of Indented Servants*

The length of service of the indentured servant varied from colony to colony. In Virginia it was originally seven years, in Maryland five years, in Rhode Island commonly ten years.² One source of trouble was that many servants were held under verbal agreements without any written contract. Masters would then often allege that the agreement held for a longer period of time than it actually did. To remedy this injustice, the Colonies passed a great deal of legislation. In 1654, Virginia decreed that servants over sixteen who did not have written indentures, should serve for six years, and that those under sixteen should serve until they were twenty-four. In 1661 she changed the term of those over sixteen to five years (so that a servant might be free as young at twenty-one) while those under sixteen were to remain bound until they were twenty-four. In 1666 she provided that servants over nineteen were to serve for five years but all those under nineteen until they reached the age of twenty-four.³ South Carolina in 1717 provided that an unindentured servant should have "five years service but not be freed in that time before 21,"⁴ thus paral-

¹ Scharf, *History of Maryland*, vol. i, pp. 371-72.

² For discussion of this point see Ballagh, *White Servitude in Virginia*, pp. 24-25.

³ For further study of the Virginia situation, cf., P. A. Bruce, *Economic History of Virginia*, vol. ii, pp. 3-7.

⁴ *South Carolina Statutes*, vol. iii, p. 14.

leling the Virginia Act of 1661. Maryland enacted rather complicated legislation in 1715 in order to prevent fraud and protect the servants from the danger of serving excessive time.¹ All of these colonies required masters to register their servants. The period of service could, however, legally be prolonged as a punishment for serious misbehaviour, such as running away,² contracting a marriage with another servant, giving birth to or begetting a child, or committing fornication with the negroes, free or slave.³

Running away became such a serious problem that the Colonies tried two other deterrents besides prolongation of the term of service, namely, the setting of strict bounds beyond which the servant might not go, and corporal punishment if he overstepped them. Massachusetts did not

¹ *Acts of Assembly Passed in the Province of Maryland from 1692 to 1715*, p. 144, "that whosoever shall transport any servant into this province without indenture, such servant being above the age of twenty-two, shall be obliged to serve the full time of five years; if between eighteen and twenty-two, without indenture, six years; if between fifteen and eighteen, without indenture, seven years; if under fifteen, without indenture, shall serve until he or they arrive at the full age of twenty-two years."

² In Virginia, the term of runaway was extended at first, 1 year, then lengthened. See Henning, *Statutes*, vol. i, p. 252. *Statutes*, vol. iii, p. 29. Act of 1686. (b) Pennsylvania stipulated (1710) that servants who ran away should serve five additional days for every day absent. Quoted from *Laws of the Province of Pennsylvania*, 1728, p. 1. (c) Maryland 1715—a runaway servant "shall make such satisfaction by servitude otherwise—not exceeding ten days service for one day's absence." *Acts of Assembly Passed in the Province of Maryland from 1692 to 1715*, p. 141.

³ Henning, *Virginia Statutes*, vol. iii, pp. 452-53. The law of 1705 provided for one year additional service on the part of a female servant giving birth to an illegitimate child—with these exceptions: 1st. if the master was the father of the child, no additional service was required: 2nd. if a negro was the father, the mother must pay either 15£ to the county or be sold into service for five additional years.—*Laws of Province of Penn. 1728-40* (Act of 1700) imposed a maximum of two years and minimum of one year additional time.

allow the servant to leave the township without written permission. Maryland placed the limit at ten miles from his master's home.¹ South Carolina placed it at two miles, and decreed that if a servant were discovered beyond bounds, he was to be returned to his master and be whipped by the constable of every town through which he passed; when he finally reached home his master was to complete the good work by administering a drubbing of his own.²

In all cases of misdemeanor by the servants the administration of the law was in the hands of magistrates, who were, at least in the South, either the planters themselves or else their friends. The possibility of abuse of power was therefore very great. For a like reason, protection against actual ill-treatment by the masters was not strong. By the terms of the indenture the master contracted to feed and clothe the servant sufficiently, not to over-work him, and to treat him kindly. Upon complaint of the servant, the county courts could summon the master and try the case. If found guilty, the master was fined, and if the offense was flagrant, he lost the services of his servant. A semi-servile class, however, would obviously be slow to make any complaints, and if they did, the courts to whom they had to appeal would be apt to be prejudiced against them. All this of course is mere inference. The actual truth is so hard to discover that any definite statement would be misleading. Optimistic interpreters of the status of the indented servant, however, base their case against every probability.³

¹ See *South Carolina Statutes*, vol. iii, p. 710. Act of 1744. Virginia had a similar system of administering punishment in correspondence to distance from house. Henning, vol. iii, pp. 456-7, 1705. *Records of Mass. Bay Colony*, vol. i, p. 115, Act of 1634; *Acts of Assembly passed in the Province of Maryland*, 1692-1715.

² *South Carolina Statutes*, vol. iii, p. 627.

³ For optimistic accounts, see McCormack, *White Servitude in Maryland*, p. 78; M. C. Tyler, *England in America*, p. 155. For pessimistic account, see Eddis' *Letters from America*, London, 1792.

Indentured servitude was prevalent for a much longer period of time than is commonly thought, and always comprised a considerable share of the colonial population. Thus in Virginia in 1671 there were 6,000 indentured servants out of the total population of 40,000, as compared with only 2,000 negro slaves; ¹ a ratio of approximately one servant to every five freemen.

The German migration from the Palatinate into Pennsylvania began about 1710, and after 1728 practically all the immigrants into the province entered as indentured servants.² During the years 1771-1773 nearly 5,000 indentured servants entered the port of Philadelphia alone.³ McCormack estimates ⁴ that in 1660 the ratio of servants to freemen in Maryland was about 1 to 11, and that in 1752 it was approximately the same. The ratio being thus constant, though the population had increased and the original servants been freed, the only conclusion that can be drawn is that many of the freemen had either been servants themselves or were children of servants. In the North, the ratio was of course not so great. Rhode Island in 1708 had 482 servants in a total population of 7181, or a ratio of about 1 to 14.⁵

Indentured service continued through the 18th and into

¹ Henning, *Statutes*, vol. ii, p. 515. Gov. Berkeley's reply to interrogations of commissioners.

² Cf. Geiser, *Redemptioners and Indentured Servants in Penn.*, pp. 23-28. The earlier Germans 1710-1728 were prosperous and did not come as indentured servants, but the poorer elements sold themselves for ship-money to escape from the Rhenish provinces. Some of the Scotch-Irish immigration in this period (after 1728) entered independently.

³ "Record of Indentures in the Office of the Mayor of Philadelphia," reprinted vol. xvi, *Proceedings of Penn.*, pp. 4-325.

⁴ McCormack, *White Servitude in Maryland*, pp. 28-29.

⁵ J. G. Palfrey, *Compendious History of New England*, vol. iii, p. 330.

the 19th¹ century. In fact there was not appreciable decline in the number of German "free-willers" who entered Maryland until after 1817, when legislation protecting the servants made the trade unprofitable for the shipmasters.² For the Colonies as a whole, Professor Commons goes so far as to estimate that one-half of all the immigrants came as indentured servants.³

With the development of slavery, however, white servitude declined. It was not until about 1700 that slavery became the dominant institution in Virginia, and its triumph in the other colonies was still slower. Negro slavery displaced white service because it was more economical. A master could own a white servant for a few years, and colonial legislation was tending to decrease this period steadily. He could own the negro, on the other hand, for life, and his descendants after him. The negro was, furthermore, more amenable to grinding labor than was the servant; and, if a runaway, more recognizable. Despite his greater utility, his purchase price was at first only about double that of the indentured servant.⁴ This was due to the increasingly efficient organization of the slave trade by which a small amount of rum could buy a large number of slaves.

¹ See "Diary of John Harrower," reproduced in the *Am. Hist. Review*, vol. vi, when he writes (1774) of "Seventy servants on board all indented to serve for four years there at their different occupations," p. 73.

² Hurd's statement that "this species of servitude (indented) became obsolete about the time of the War of the Revolution." (Hurd, *Law of Freedom and Bondage*, vol. i, p. 218) is in consequence erroneous.

³ J. R. Commons, *Races and Immigrants in America*, pp. 30-31.

⁴ See letter from Col. Byrd of Virginia to Mr. Anchem of Rotterdam (1739) quoted in the *Am. Hist. Rev.*, vol. i, p. 90 where Byrd states that Palatinates selling their four year term "fetch from 6 to nine pounds," while negro slaves brought about twice as much.

^VThe introduction of slavery made the lot of the servant increasingly hard.¹ He was subject to the new competition and punished severely by the master. It was common for the same legislative act to provide for both servants and slaves, and in the eyes of the law they were generally linked together.² A contemporary observer, William Eddis, said: "Negroes being a property for life, the death of slaves . . . is a material loss to the proprietor; they are therefore in almost every instance under more comfortable circumstances than the miserable Europeans."³

What happened to the servant after his term was over has seldom been satisfactorily discussed. Ballagh states that the freed servant formed "a very strong type of peasant proprietor."⁴—and that he "provided for the growth of a strong yeomanry."⁵ Though the matter is shrouded in uncertainty, all the evidence points to an opposite conclusion. All that he received from his master when freed was some clothing, a few bushels of corn, a tool or two, and sometimes a gun.⁶

¹Compare George Aldis' favorable account of the condition of indentured servants in Maryland about 1670 with the pessimistic account given in 1792 by William Eddis, *Letters from America* which describes conditions after the competition with slavery had set in.

²*Cf. Acts of Assembly passed in the Province of Maryland, 1715, p. 141.*

³Eddis, William, *Letters from America*, London, 1792. (Describing conditions in America about 1770), pp. 69-70.

Ballagh, *op. cit.*, p. 87.

⁵*Ibid.*, p. 90.

⁶*Acts of Assembly of Maryland, 1692-1715.* "Every man-servant shall, at such time of expiration of his servitude—have allowed and given to him, one new hat, a good suit—; one new shift of white linen; one new pair of bench-made shoes and stockings; two hoes, and one ax; and one gun of twenty shillings price. All women-servants, at the expiration of their servitude, as aforesaid, shall have allowed and given them, a waistcoat and petticoat, a new shift of white linen,

Bruce states that the freed servant in Virginia received only a couple of suits of clothes, a few tools, and enough corn to last approximately a year, the total value of these articles not exceeding 10£.¹ Contrary to popular impression, a bonus of 50 acres of land was not given. Such an outfit was not sufficient for the freedman to set himself up in independence on any but the smallest scale, and small-scale farming was just what the agricultural system of the Southern colonies was not adapted to. The better lands were already appropriated, and the population was practically self-sufficing in so far as necessities were concerned. Towns were few and there was little call at this time for further artisans. Add to this the incoming of slavery and the consequent falling off in the demand for ordinary hired labor, and what place was left for the freed servants? From what more likely class could the landless whites, the "crackers," "poor whites" and "cove-dwellers" of the mountains have been recruited? In large part these surplus freedmen may well have been driven to the interior and to the uplands, shut out from large landed possessions, and barred from lucrative employment by slave labor.

6. *Apprenticeship in the Northern and Middle Colonies*

In the North the situation was different. Here apprenticeship, not indented service, was the rule. Since there were more towns and cities, there was consequently a greater division of labor, and it was necessary to recruit men for the handicraft industries of the time. The blacksmith, the cooper, the wheelwright, the mason, the carpenter, the

shoes and stockings; a bib apron; two caps of white linen; and three barrels of Indian corn," p. 143. Cf. *South Carolina Statutes*, Act of 1717, vol. iii, p. 14. In this colony the master gave only clothing to servant at termination of his service.

¹ P. A. Bruce, *Econ. Hist. of Va. in 17th Century*, pp. 42-44.

tailor, were necessary figures in every northern town,¹ Many of the seaports had their shipyards, and boys were even apprenticed to learn the "art and mysteries of navigation and mariner."²

Between the years 1694 and 1707, 107 indentures were recorded in the town of New York alone, while in the period 1718-1727, 198 were filed.³

The length of apprenticeship varied. A statistical study of the industries filed in New York for the years 1718-1727⁴ shows the following results:

<i>Period of Service</i>	<i>No.</i>	<i>Per cent</i>
Less than 7 years	9	4.6
7 years	120	60.6
More than 7 years	69	34.8

This shows the preponderance, although not the universality of the seven-year term in New York. Of those whose terms of service exceeded seven years, twenty were for eight years, twenty-one for nine years, and nine for ten years. There were two instances of sixteen-year apprenticeships and one each for seventeen and eighteen years.

Philadelphia figures for 1771-73 show different results.⁵

¹Edward Johnson in his *Wonder-Working Providence of Zion's Saviour in New England*, p. 248, mentions the following trades which in 1648 were represented in Boston: "tailors, carpenters, joiners, glaziers, painters, gun-smiths, lock-smiths, blacksmiths, naylers, cutlers, weavers, brewers, bakers, coster-mongers, felt-makers, braziers, pen-terers, and tinkers, rug-makers, masons, lime, brick and tile makers, card makers, turners, pump-makers, wheelers, glowers, fell-mongers, and furriers," p. 248 (Jamieson Edit.).

²Weeden, *Economic History of New England*, vol. i, p. 259. The term of apprenticeship for the sea was generally for four years.

³*New York Historical Society's Collection*, vol. xviii, "Indentures of Apprentices," vol. xlii, "Indentures of apprentices."

⁴Ref. *N. Y. Historical Society's Collections*, vol. xlii, "Indentures of Apprentices 1718-27."

⁵*Record of Indentures of Apprentices, servants, etc.* filed in the office of the Mayor of Philadelphia, Pa., 1771-73.

Of a total of 171 cases chosen at random from the indentures filed for these years, the following were the frequencies of the various terms of service:

<i>Period of Service</i>	<i>No.</i>	<i>Period of Service</i>	<i>No.</i>
1 year	2	11 years	7
2 years	5	12 "	6
3 "	20	13 "	9
4 "	17	14 "	3
5 "	30	15 "	4
6 "	20	16 "	1
7 "	16	17 "	4
8 "	8	18 "	1
9 "	9	19 "	1
10 "	7	20 "	1

171

The fact that 55% of the indentures were for less than seven years in Philadelphia as compared with only 4.6% in New York is significant. This produces a corresponding reversal in the number whose terms were exactly seven years. Whereas in New York this group comprised 60.6% of the whole number, in Philadelphia it former only 9.4%. The group above seven years was comparativey constant, there being approximately 35% in each case, although there were a greater number of long term engagements in Pennsylvania.

Thus the term of service was in general shorter in Pennsylvania than in New York, although allowance must be made for the fact that New York figures are of an earlier date. In the period between New York's latest figures and Pennsylvania's earliest, New York may appreciably have shortened her term.

7. Functions of Colonial Apprenticeship

The function of Colonial apprenticeship was fourfold. It was at once a punishment for debt, a penalty for idleness,

a system of poor relief, and the earliest educational institution.

(1) It was a punishment for debt. We have already seen how prominent a part binding-out for debt played in the importation of indentured servants and indeed often in their indenturing on this side of the water. Owing to the frequently undifferentiated state of apprenticeship and indentured servitude and the ambiguity of the law, many of these indentures were made out for apprenticeship instead of for true servitude.

(2) It was a penalty for idleness. This, even in a child, was a sin to the Puritan. Connecticut ordered her selectmen to put out to service single persons 'who lived an idle and riotous life.'¹ Massachusetts followed a similar policy and bound out those whom she deemed idlers.²

(3) Apprenticeship here, as in England, was a system of poor relief. Massachusetts as early as 1636 had enacted "that all towns shall take care to order and dispose of all single persons and inmates within their town to service."³ Nor was this merely paper legislation; records exist of its enforcement.⁴ In 1692 Massachusetts reenacted this law

¹ *Connecticut Colonial Records*, vol. ii, 1673, p. 66, also vol. iv. *Mass. Col. Records*, vol. ii, p. 180, where the selectmen given power to present to the court all "idle and unprofitable persons, and all children who are not diligently employed by their parents" and the courts then to bind them out. Cf. also vol. v, p. 373.

² Cf. *Records and Files of the Quarterly Courts of Essex County, Mass.*, vol. v, where in 1669 it was ordered that Joseph Turland "an idler and extravagant person" who "runs up and down, neglects his business, and is in danger of falling into mischief" should be bound out by the selectmen of Beverly, p. 160.

³ *Records of Mass. Bay Colony*, vol. i, p. 186.

⁴ *Manuscript Collections of Mass. Archives*, vol. ix, p. 5, where record is made where the children of Goodman Burril (evidently deceased) should be put out to service since their grandfather would not support them. The mother was to be shipped back to England.

with the provision that the selectmen should bind out the children and have the legal right to act for them.¹ In 1703 they made a further emendation. The previous law had been thought to apply only to children whose parents actually received alms; the new law now declared that it applied to all children whose parents were *deemed* unable to maintain them.² It was thus prospective, not merely retrospective. This extension of the law closely parallels that of the English Poor Law of 1601, which, as we have seen, similarly broadened the interpretation of what constituted a "poor" parent.

Virginia in 1672 had passed similar legislation. The Justices of the Peace of every country were ordered to "put the *laws of England* against vagrant, idle, and dissolute persons in strict execution."³ The county courts must bind out "all children whose parents are not able to bring them up, apprentices, tradesmen, the males till one and twenty years of age, and the females to other necessary employments, till eighteen years and not longer."⁴ South Carolina in her act of 1740 provided for the children of indigent parents in parallel fashion, while Connecticut, and indeed all the other colonies, built their poor law legislation as closely as possible upon the English model.⁵

(4) Finally, apprenticeship was a state-directed educational system. Masters were in general required by statute law, to impart not only trade training, but to give instruction in the liberal arts, and to inculcate sound mortality as well. Massachusetts in 1642, ordered that all parents and masters,

¹ *Mass. Col. Records*, not vol. iv, must be vi or vii, p. 67.

² *Acts of the Colony of Mass. Bay*, vol. iv, p. 538.

³ Henning's *Statutes*, vol. ii, p. 298.

⁴ *Ibid.*

⁵ For review of Connecticut system, see E. W. Capen, *The Historical Evolution of the Poor Law in Connecticut*.

"should endeavor to teach, by themselves or others, their children and apprentices, so much learning, as may enable them perfectly to read the English tongue and knowledge of the capital laws," and further "do breed and bring up their children and apprentices in some honest, lawful calling, labour or employment."¹ If parents or masters neglected to give this intellectual or trade instruction, the children were to be taken away from them by the selectmen and indentured as apprentices to masters who would give it. Thus apprenticeship was made to serve as a school for children uninstructed at home. The prescribed education for every child included some instruction in the trade and some in the liberal arts. Failure on the part of the master or parent to give either was punished by the removal of the child.

Free public schools for the poor hardly existed in Massachusetts before 1700, and from then on spread but slowly.² In this interregnum the device of apprenticeship served as a rude substitute. It was the only guarantee that children whose parents *would not* or *could not* pay the customary tuition fees, should be instructed. It thus established the principle of universal free education.

Records exist of the enforcement of this Massachusetts Act of 1642. The selectmen of Dorchester, Brookline, and Watertown haled delinquent parents before them and carried out the provisions of the law.² In 1668, however, the legislature stated that it had not been well observed, but that the selectmen should enforce it more stringently in

¹ *Colonial Laws of Mass.* (edit. by Whitman), p. 136.

² G. L. Jackson, *The Development of School Support in Colonial Massachusetts*, pp. 34-74, gives an analysis of the early school records of 21 Massachusetts towns. Dedham had a free public school in 1646, but it was an isolated instance for several decades.

³ For detailed discussion, see Jackson, *op. cit.*, pp. 29-31.

the future. The Essex county court in the following year ordered the selectmen of Topfield to enforce the act and to make out a "list of all those young persons who do live from under family government."¹

Professor Jernegan holds that the act of 1642 was nullified in 1695 by the refusal of the English Privy Council to allow the act passed by the Massachusetts legislature upon the merging of the colonies of New Plymouth and Massachusetts which continued all legislation hitherto enacted by either colony.² Thereafter all new legislation concerning apprentices save for a special act in 1735 for Boston, applied only to poor children and not to all children. With the exception of Boston, therefore, apprenticeship could not be legally resorted to after 1695 as a method of educating children whose parents had neglected their duty.

Both the Connecticut and New Haven colonies passed acts almost identical with the Massachusetts act of 1642.³ Thus the New Haven act of 1656 provided that if parents and masters did not teach children and apprentices "to read the Scriptures and other good and profitable printed works in the English tongue and to understand the main grounds and principles of Christian religion necessary to salvation," the children were to be taken from them and placed as apprentices "with such others who shall better both for publick convenience and for the particular good of said children of apprentices."⁴

In New York, on the other hand, apprenticeship was not

¹ *Records and Files of the Quarterly Courts of Essex County, Massachusetts*, vol. iv, p. 212.

² M. W. Jernegan, *Compulsory Education in the American Colonies*, *School Review*, vol. xxvii, pp. 24-43.

³ R. F. Seybold, *Apprenticeship and Apprenticeship Education in Colonial New England and New York*, pp. 52-60.

⁴ *New Haven's Settling in New England and some Laws for Government*, published in 1656.

used as a means of compelling parents to educate their children. Indeed it was not until 1788 that it was required that poor children bound out as apprentices be taught reading and writing.¹ Despite the absence of legal requirement, however, approximately one half of the indentures filed between 1694 and 1707 specified that the master should teach, or have the apprentice taught, reading and writing, while from 1718 to 1727 the percentage was still greater.² A large number of the indentures provided that the master should send the apprentice to school during the winter, or during the evenings. This is a clear indication of the use of agencies other than the master himself to give liberal training to the apprentice.

By 1770 in Pennsylvania as well, although legal enactment was lacking, the indentures almost invariably required the master to give schooling to the apprentice.³

In Virginia, the apprenticeship regulations took a slightly different turn. A law of 1646 provided for the apprenticing of poor children "to tradesmen or husbandmen to be brought up in some good and lawful calling."⁴ So far it is merely the application of the Elizabethan poor law. But it also commanded the commissioners of every county to choose two poor children, whose parents were unable to support them and send them "to James City"—to be employed in the public flax houses under such masters and mistresses as shall then be appointed, in carding, knotting, and spinning.⁵ It was prescribed that the children should be

¹ Seybold, *op. cit.*, p. 87.

² New York Historical Society's Collections. Vol. xviii, *Indentures of Apprentices, 1694-1707*. Vol. xlii, *Indentures of Apprentices, 1718-1727*.

³ Record of the Indentures of Individuals Bound as Apprentices, Servants, etc., Philadelphia, 1771-1773.

⁴ Henning, *Statutes*, vol. i, pp. 336-37.

⁵ *Ibid.*

furnished from their home county with sufficient clothing and provisions to maintain them.¹ An appropriation of 10,000 lbs. of tobacco was made to house these children, and two buildings were ordered to be erected for them.

It does not require much perspicacity to perceive that this was a trade-school for poor children, state-built and county-supported. No mention is made of teaching the children reading or writing. The act, unlike that of Massachusetts, provided for industrial training only. It was not till 1705, in an act applying apprenticeship to orphans, that it was ordered "that the master. . . shall be obliged to teach him to read and write."² This educational provision was extended in 1769 to illegitimates, when it was provided that they should be indentured as apprentices under the protection of the County Court. So long as the aristocratic landholders were in power in Virginia, free public education was impossible.³ Apprenticeship was therefore the only means of education that the poorer classes possessed.

In all the colonies with the possible exception of the South, therefore, trade training was not the only educational feature of apprenticeship. Instruction was required in the liberal arts as well, while in New England, the colonies required that the apprentices be educated in the Christian religion and sound ethics. Apprenticeship was thus not a mere means of acquiring trade efficiency, but it was a preparation for citizenship and for life.

¹ To wit—"Six barreles of corne, two coverletes or one rugg and one blanket, one bed, one wooden bowle or tray, two pewter spoons, a sow shote of six months old, two laying hens, with convenient apparell both linen and woollen with hose and shoes"—certainly a quaint provision. Henning, vol. viii, p. 376.

Henning, *Statutes*, vol. iii, pp. 375-76.

³ For an account of Virginia's early education system see E. W. Knight, *The Evolution of Public Education in Virginia*, *Suwanee Review*, January, 1916, pp. 24-41.

8. Other Features of Colonial Apprenticeship

While in theory the consent of the apprentice was necessary before he could legally be transferred from one master to another, in practice this provision was often disregarded or deemed a mere technicality. Apprentices were often listed among the assets of bankrupts, and were either taken personally by the creditors as payment for debt or sold to satisfy the obligation.¹ Upon the death of the master, the apprentice was often sold with the rest of the estate by the heirs.² Often indeed the sale of apprentice's unexpired serving-time was resorted to by thriving and solvent masters. The papers of the colonial period frequently contained advertisements listing apprentices for sale.³

Again, colonies, in order to protect the apprentices provided that they should not be sold out of the colony.⁴ Such a measure was necessary since it would otherwise have been possible for a Massachusetts cobbler to have sold his boy apprentice to a Virginian tobacco planter. Since the apprentice would be out of Massachusetts jurisdiction, he could be exploited as cheap labor.

Female apprentices served longer and were given fewer educational opportunities than were boys. (a) They served

¹ *Records and Files of Quarterly Court, Essex County, Mass.*, vol. iv, p. 445, *ibid.*, vol. iii, p. 174.

New York Historical Society Collections, vol. xlii, *Indentures of App. 1718-1727*, p. 121, where 20£ was paid to Peter Colwell by William Dugdale and John Leach "for 11 years 3 months of unexpired serving time of John Galloway, Apprentice." Also *Mass. Archives*, vol. ix (*Domestic Relations*), p. 6064 where the unexpired term of an apprentice was transferred in payment of debt.

² *Boston News Letter*, April 15, 1774, *ibid.*, April 25.

⁴ *Laws of Province of Penn.*, 1721, pp. 9-10. South Carolina provided that not only should the apprentice not be sent out of the colony but that he must be transferred only to those persons engaged in the same trade. Cf. *South Carolina Statutes*, vol. iii, p. 544.

longer. Of 125 cases selected as random from the Philadelphia record books, 41, or 32.8% were for less than 7 years, 13, or 10.4% were for 7 years, and 71, or 56.8% were for more than seven years, whereas only 35.6% of the indentures of men were for more than seven years.¹

(b) They were given fewer educational opportunities. Though there are instances of girls entering the trades,² such cases were too rare to affect their general status. Woman's career was in the home, and formal education was deemed unnecessary for it. Though bound out to a tradesman, female apprentices were really not workshop assistants but rather household servants. The technical educational provisions in their indentures were generally confined to specifying that they should be taught "to sew plainly."³

Their liberal education was also less than that of the boys. The Massachusetts law of 1642, as we have seen, specified that while all male apprentices should be taught to read and write, female apprentices were only required to be taught reading.⁴ In 1771 "ciphering" was added to the educational requirements of the male apprentice, and writing, but not "ciphering," to that of the female apprentice. The privileges of the girl apprentice thus always lagged a step behind those of her brother.⁵

9. *An Appraisal of Colonial Apprenticeship*

In summing up our survey of Colonial apprenticeship, we may say that it was true to its English prototype in two

¹ See *Record of Indentures of Individuals Bound Out as Apprentices in Philadelphia, Penn., 1771, 1773*, p. 21325.

² See Abbott, Edith, *Women in Industry*, pp. 13-171.

³ See *N. Y. Historical Society Collection*, vols. xviii and xlii.

⁴ *Acts of Col. of Mass. Bay*, vol. i, pp. 654-55.

⁵ An exception should be made as regards Virginia in respect to the apprenticing of illegitimates, cf. Henning, *Statutes*, vol. viii, p. 376.

particulars. It was a system of poor relief and a penalty for idleness. It differed, however, from the English system in that (a) the seven-year term was not as universal, (b) apprenticeship became a means of acquiring a liberal education, (c) practically all apprenticeship regulations were administered, not by guilds,¹ but by the town and county officers.

In appraising apprenticeship, we must be on our guard against wrapping it in the vague glamour of the past. The close filial relationship of master and apprentice, the certainty of a trade, the supervision over morals and education, have all excited encomiums that are more enthusiastic than critical, and many novels have praised the idyllic conditions of the "prentice-boy."²

The dark side of the shield has been seen less readily. The apprentice did not work solely at his trade, but was also compelled to assist with the family "chores." Often he worked at jobs that bore no relation to the trade in which

¹Gilds, while infrequent, were not absent in colonial handicrafts. See *Collected Records Mass. Bay Colony*, vol. iii, pp. 132-33, when in 1648, Richard Webb, James Everill, Robert Turner, Edmund Jackson "and the rest of the shoemakers" were incorporated and given power to elect officers and to, "have power to make orders for the well governinge of their company, in the manageing of their trade and all the affayres thereunto belonging, and to change and reform the same as occasion shall require and to annex reasonable penalties for the breach of the same." It was provided that "any person or persons who shall use the art of a shoemaker or any part thereof, not beinge approved of by any of the officers of ye sed shoemakers to be a sufficient workman, the s'd court shall have power to send for such persons and suppresse them"—This latter is a delegation to the guild of power to suppress or to supervise its workmanship which would naturally involve apprenticeship. A similar grant was made to Thomas Venner and others for a cooper's guild "for preventing abuses in their trade," *ibid.*, p. 133. For the part played by English gilds in the enforcement of the Statute of Apprentices, see Dunlop and Denman, *English Apprenticeship and Child Laborer*, pp. 75-81.

²Especially those of Elijah Kellogg.

he was supposed to be trained. In order to be a blacksmith's apprentice, he had to hoe his master's garden. In order to master the "mysteries" of metal work, he had to take care of the stock—the horses and the cattle, assist in the weaving, and help out at harvest time. In a word, he was "hired man" as well as apprentice. His work at these household tasks was a complete waste of time so far as learning a trade was concerned.

Another real fault of the old apprenticeship system was that the period of apprenticeship was too long. The rough handicraft trades of that day could ordinarily be mastered in much less than seven or even five years. This extra period constituted an exploitation of the boy, for we must remember that the apprentice earned no wages, being supposed to be paid for his labor by the trade instruction he received. If he learned the trade before his period of service expired, this added labor was an outlay for which bare maintenance did not compensate. If this lengthy term of service was an injustice to the average boy, it was certainly a particular cause for grievance to the superior boy. It did not matter whether he learned quickly or not, he must serve the same term in any case. The inelasticity of the indenture could but incite dissatisfaction among the more capable apprentices and engender a tendency to "soldier" since there were not any rewards for skill and ability.¹

It is not true, however, that the long term of apprenticeship was made hazardous by inventions, which obviated processes in which boys had been working for years and made unnecessary their accumulated experience. Inventions were few in the colonial handicraft period. Industry passed on from one generation to another in almost identical form.

¹ Cf. on this point. Testimony of Carrol D. Wright, *Report of Industrial Commission*, vol. vii, p. 18.

Doubtless also many of the masters were men of the sort who abused the confidence reposed in them, and many injustices and cruelties were practiced which the isolation of the court, the looseness of government, and the scantiness of the records obscure.

✓ The good features of apprenticeship were, however, real. The state supervised the training of the child until he came to maturity. The master was compelled to teach the apprentice his trade, to give him the rudiments of a liberal education, and to impart sound morals. Neglect to perform any of these tasks entitled either a fine or the loss of the apprentice.¹ The whole youth of the child in industry, not merely his working day, was supervised and directed.

This system continued practically unchanged through the turmoil of the American Revolution, and indeed wherever hand production prevailed, well down into the 19th Century.

¹For instances of enforcement see, *Mass. Coll. Records*, vol. iii, p. 310.

CHAPTER III

THE DECLINE OF APPRENTICESHIP IN THE MACHINE ERA

1. *The Development of the Factory System.*

It is difficult to fix a definite date for the advent of the American Industrial Revolution. The transition from a hand to a machine basis and from the domestic and the "putting out system" to the factory system, is necessarily a slow and long-drawn-out process. It progresses more swiftly in some industries and in some sections of the country than in others. The cotton and woollen industries were in the factory stage long before shoe-making and brewing.¹ The South, with the exception of such cities as Atlanta, remained on a handicraft basis long after the Civil War, and the frontier of course indefinitely longer. Even now there are hamlets off the beaten track of communication in which life goes on much as in the days before the machine.

It might be said that the opening of Slater's cotton mill in 1794 marks the initial step of the movement. But the manufactures of that day, as shown by Hamilton's reports, were comparatively few and cumbrously managed.² It was not until the Embargo and Non-Intercourse Acts, followed by the war of 1812, that there came, in some lines,

¹ Cf. Blanche E. Hazard, "The Organization of the Boot and Shoe Industry in Mass. before 1875," *Quarterly Journal of Economics*, vol. xxvii, pp. 237-262. Also J. R. Commons, "American Shoe Makers, 1848-1895," *ibid.*, vol. xxiv, pp. 39-85. For the brewing industry see Schlüter, *History of the Brewing Industry and Brewery Workers Organization*, pp. 24-85.

² Hamilton's Report on Manufactures in *State Papers on the Tariff* (edited by Taussig), pp. 79-107.

the necessity as well as the opportunity of providing for home needs by domestic industry. Manufactures of cotton and wool, and a few other staples, were established by the conclusion of the war, and fostered by a series of tariffs beginning in 1816. But certainly down to the twenties the major part of our industries were still organized essentially as they had been during the colonial period. "The master worked side by side with his journey-man and his apprentice, and was not sharply distinguished from them by either his earnings or his social position."¹ It was not until the booming industry of the 20's and the 30's and the springing up of such mill towns as Pawtucket, Lowell and Lawrence, that America experienced her first taste of the real factory system. The suddenness of the change is indicated by the chorus of protests in the late twenties. That period witnessed for the first time regularly organized workmen's parties, a labor press, and such well-known leaders as Fanny Wright, Robert Dale Owen, the Evans brothers, and Seth Luther. But while the movement of the twenties was very real and while the factory system steadily gained ground in the North, especially in Southern New England from 1840 to 1860, it was not until after the Civil War that its period of greatest growth began.²

2. *Effect Upon Status of Apprentices*

The effects of the industrial revolution upon children should be most carefully noted. It is quite clear that it debased the conditions of the children in industry in two ways:—(a) It divested apprenticeship proper of its educational features both trade and civic, (b) it added children to in-

¹E. L. Bogart, *Economic History of the United States*, 2nd. ed., p. 252.

² See P. W. Bidwell, "Population Growth in Southern New England, 1810-1860," *Publications American Statistical Association*, vol. xv, pp. 813-39. For the state of manufactures prior to 1860 see Victor S. Clark, *History of Manufactures in the United States*.

dustry who were not even nominally apprentices at all, but merely child laborers. Apprenticeship and child labor had been synonymous terms; they now became separate and distinct.

If the ordinary craftsman was deeply affected by the substitution of power-driven machinery for his hand-tools, much more deeply and more subtly was the apprentice. For him it meant a revolutionizing not only of his methods of work but of his entire social status as well, both at home and in the shop.

His home had formerly been at his master's. He had lived and worked familiarly with him, receiving his board and clothing in return for his services. Now, with the growth of industry, the master could no longer house all of his apprentices. He had to let them find their own shelter, and commute their former benefits into a cash allowance. The apprentice thus found himself a wage-earner, with greater freedom, greater opportunity, and greater danger as his lot.

Within the shop the change was equally great. The master was no longer literally a "master-workman," in close personal touch with each boy. The very nature of machine production had fixed a gulf between the two. The tasks of the employer were becoming more and more exclusively those of the business man, his immediate concern was buying and marketing rather than craftsmanship. His contact with his apprentices grew rapidly infrequent and impersonal. In brief, master and apprentice had stood in the relation of father and son; they now stood in the relation of employer and employee.

The training the apprentice received changed no less than his station. Machine production does not require the all-round skilled workman because it increases the division of labor and splits a trade into many different jobs. There

is less opportunity to exercise general skill should it be acquired, and the mastery of the whole gamut of machines within a trade becomes well-nigh impossible. One man, one machine is the rule. Apprenticeship accordingly became specialized.

The purely cultural training of the apprentice fared of course even worse. The master who did not see him from one week's end to the other could hardly be expected to teach him his letters or his catechism. Accordingly we find the period of the early Industrial Revolution from 1810 to 1830 characterized by a rapid rise in day-schools. The earliest schools in Pennsylvania were for the pauper children who could no longer get cultural training from their employer. Is it a mere coincidence, then, that the widespread development of secular Sunday schools where working children could be taught the rude elements of reading, writing, *etc.*, coincided with the rise of the new impersonal factory system? In the same period, to serve as a substitute for the loss of the personal touch, came the founding of societies for the improvement of apprentices and the establishment of libraries for their education.¹

3. *Child Labor Under the Factory System*

The new system, however, not only divested apprenticeship of its educational and personal opportunities, but it brought into industry large numbers of children who were set at routine jobs under conditions that were often exceedingly bad.

In the cotton and woolen mills, women and children furnished the majority of the operatives. Tench Coxe, Hamilton, Niles, Clay and Mathew Carey advanced as one of their chief arguments for the protective tariff, the fact

¹ Such as the Apprentices Free Library in Philadelphia.

that manufactures could be run by the surplus labor of women and children who would otherwise be idle. Even Gallatin in his Free Trade Memorial of 1831, admitted that protection might be justified on this count.¹ The general reasoning involved was very simple. Puritan morality had regarded idleness as a sin and had forced children to work at an early age. At first it therefore welcomed the wider opportunities of manufacture, since if it was proper for women and children to be kept busy in the handicrafts and agriculture, it was also proper that they should work in the mills.

Statistics are scanty for this early period, but the Digest of Manufactures in the Census of 1820 gives complete statistics for the textile mills of Massachusetts, Rhode Island and Connecticut. In Massachusetts boys and girls constituted 43% of the laboring force, in Connecticut 45% and in Rhode Island 55%. What age-group is included under the heading "boys" and "girls" is not specified, but it probably comprised those under 16. The Friends of American Industry in 1832 said that there were 3472 children under 12 years working in the cotton mills of Rhode Island, or 40% of the entire force. According to the report of their committee, child labor under 12 in this industry was non-existent in Virginia, Maryland, Maine, Massachusetts, Pennsylvania, and Delaware, and existed but slightly in Vermont, New Hampshire, Connecticut, New York, and New Jersey. Miss Otey has shown that this was not so and that children were often employed where it was claimed that they were not.²

The hours of work in these mills were generally from

¹"Free Trade Memorial of 1831." (Taussig, *State Papers and Speeches on the Tariff*, p. 129).

²Otey, "Beginnings of Child Labor Legislation in Certain States," vol. vi of the *Report on Conditions of Woman and Child Wage-earners*.

sunup to sundown. Manufacture, in other words, had taken over the working day of the handicrafts, ignoring the newer and more severe strains imposed by machinery and the bad conditions of heat, light and ventilation.

Nor was corporal punishment of the child worker unknown. Seth Luther gives instances of such cruelty as the use of the whip, the breaking of a girl's leg by throwing a stick of wood at her, and hitting a child over the head with a board.¹ In Pennsylvania conditions were especially bad. In 1870, an overseer testified that the Rhode Island overseers generally used a strap with tacks inserted with which to punish the children employed² while in Massachusetts, whipping persisted even as late as 1870.³

Apprenticeship had paved the way for much of this juvenile labor. A child was expected to work. When a father contracted to furnish the labor of his children to a manufacturer, he was but carrying out a precedent which apprenticeship had furnished.

There were two systems of hiring labor: the family and the boarding-house system. Under the first, the manufacturer contracted for the services of a family. By the second, he secured the services of individuals who were to board at company houses. Children were included in the first class, but not in the second, as their board would be too expensive to justify hiring. The family system prevailed chiefly in Rhode Island, Connecticut, and the middle and southern states, while the boarding-house system was characteristic of the Northern tier of the New England states, including Massachusetts.⁴

¹ Seth Luther, *Address to the Workingmen of New England*, p. 20; and *Penn. Sen. Journal*, 1837-8, vol. ii.

² *Report of Mass. Bureau of Labor 1870*, p. 107.

³ *Ibid.*, *Report 1871*, p. 489.

⁴ Edith Abbott, *Women in Industry*, pp. 338-340.

Nevertheless, the introduction of the factory system in America did not produce as grave abuses as in England. (a) In the first place, the number of pauper children under public control here was small. While it would be wrong to say that we had no Poor Law System, since a number of pauper children were apprenticed to factories in Baltimore, New York and Connecticut,¹ their importance was comparatively slight. (b) Secondly, the development of the West gave an opportunity for the working population to migrate. This in turn compelled the manufacturer to offer better conditions in order to retain his working force.² In England the conditions had been exactly the opposite, the enclosures driving the population from the country into the manufacturing towns and there producing a glut of labor. (c) Finally, the natural spirit of the American people was more independent. The American child was not so amenable to the restrictions of apprenticeship as was his English cousin. Slater tried in vain to introduce the English system of apprenticeship into his cotton mills. The reaction of the American temperament is well shown by the boy who advised his rebellious friend, "Well, cut up like the devil, and Slater will let you off."³

¹ See *Niles Register*, vol. xv, p. 419 (1819); Bagnall, *History of the Textile Industry in the U. S.*, vol. i, p. 185; Orcutt, *History of the Old Town of Derby, Connecticut*, p. 45. Orcutt mentions a mill which employed 73 apprentices hired from neighboring almshousees. In New York City in 1839, 349 pauper children were apprenticed—chiefly to mechanics and tradesmen. See Homer Folks, *Care of Dependent, Defective and Delinquent Children*, p. 41.

² Though absolute free land did not exist till the passage of the Homestead Act in 1862, yet the western movement of population was tremendous and this depleted the labor force in the east. For influence of the frontier, see F. J. Turner, *Rise of the New West*, pp. 10-134 and *The Significance of the Frontier in American History. Report of American Historical Association*, 1898.

³ A reminiscence of Samuel Slater by his son, quoted by Weedon, *Economic and Social History of New England*, vol. ii, p. 913.

4. *Use of Apprentices as Cheap Labor*

The introduction of machines precipitated an endless quarrel between employer and workmen over the number of apprentices that should be employed. Industry could now be carried on with the majority of the workers doing specialized tasks and with a minimum of all-round craftsmen. It was early complained that manufacturers were taking large numbers of boys into their service, promising to teach them the whole trade, but in reality teaching them only one or two processes. It was cheaper to hire these boys than regular journeymen, as their wages were small. Full-fledged journeymen were in consequence displaced by these "learners," who, upon terminating their apprenticeship, would demand journeyman's wages. They were incapable of doing all-round skilled work because their training had been so specialized that they did not know the trade. Even had they been more skillful, a fresh crop of boys would have been cheaper to the employer.

Such a process could but produce a constantly increasing number of half-trained men who were thrown out of employment by a fresh batch about to go through the mill from which they had just emerged. Many apprentices, moreover, would run away before they had finished their term and would pass themselves off as journeymen. The workmen felt therefore that restriction of some sort was necessary. This could be accomplished in two ways: (a) By limiting the number of apprentices at any one time in proportion to the number of journeymen; (b) by lengthening their customary term of service—thus decreasing their rate of transformation into journeymen.

A letter to the Mechanics Free Press in 1828, stated that "there are many men in this city (Philadelphia) who have from fifteen to twenty apprentices, who never, or very seldom, have a journeyman in their shops but . . . as one

apprentice becomes free, another is taken up to fill the ranks. The boys are unable to find work after their apprenticeship, as they have ceased to be of value, as the manufacturers only want apprentices. A hat manufacturer was asked how he could sell hats at such a low price. He answered 'By using apprentices.'

As early as 1811, the New York Typographical Society complained of the overstocking of the trade with apprentices and the consequent forcing out of full-fledged journeymen.² In 1831, a reorganization of the Society was affected, and in the constitution of the new association it is declared, "the practice of runaway or dismissed apprentices working for small compensation has proved a great pest to the profession. By the poor training which is given to them, many who have spent three to seven years of the flower of their lives in acquiring a knowledge of their professions are left without employment, or obliged to resort to some business with which they are unacquainted, and thus serve a second apprenticeship."³ General Duff Green, the printer for the national government, dismissed many journeymen from his shop and hired in their stead fifty boys. He proposed to institute a school to train 200 boys and to educate them by their own labor. Through this use of apprenticeship he aimed to do away with the journeymen who were attempting to control the trade. The few men that he did have working for him received only two-thirds of the pay of journeymen.⁴ There is little doubt

¹ Letter signed Candidus, *Mechanics Free Press*, Nov. 29, 1825, quoted in Commons—*Documentary History of American Industrial Society*, vol. iii, p. 70.

² N. Y. Bureau of Labor Statistics 1911, *History of Typographical Union No. 6*, p. 69.

³ *Ibid.*, p. 108.

⁴ *Ibid.*, pp. 102-103.

that more men were trained in the printing trades than could find employment.¹ The residue were forced to travel about for positions—hence the historic figure of the tramp printer.

The coachmakers also complained that their profession was overcrowded with cheap apprentices.² The shoe-makers had similar grievances. A Lynn, Mass, union speaks of "the injurious practice of taking apprentices for a few weeks or months, letting them make one part of a shoe, and then turning them out so-called shoemakers, thereby multiplying poor workmen and filling our market with miserable goods."³ The cigarmakers also suffered from this surplus of apprentices. Overcrowding existed as well in the blacksmiths' and machinists' trades.⁴

5. *Attempts by Unions to Regulate Apprenticeship*

Labor's belief in the "right to a trade," and the desire of the workmen to lessen competition, though much weaker here than in England, may well have played a part in the general opposition to the use of apprentices. In the main, however, the opposition was based upon the plain fact that these boys who were hired in large numbers, were used merely as a substitute for adult labor.

✓ The desire to regulate apprenticeship was indeed one of the prime causes for the creation and growth of our early trade-unions. By 1806 the Philadelphia Cordwainers were regulating apprenticeship and requiring all apprentices to join

¹ For instance the printers of Charleston, S. C. in 1860 objected to the use of apprentice labor in competition with that of journeymen on the part of Col. Cunningham, editor of the *Charlestown Evening News*. Snowden, *Notes on Labor organization in South Carolina 1742-1861*, pp. 30-32.

² Commons, *Doc. Hist. of American Industrial Society*, vol. vi, p. 167.

³ *Ibid.*, vol. viii, p. 232.

⁴ J. M. Motley, *Apprenticeship in American Trade Unions*, p. 26.

the union upon the termination of their services. In 1836, the National Typographers' Convention resolved that "every beginner shall serve until he is 21, at the time of entering he shall not be more than 15, and every boy taken as apprentice shall be bound to the employer in due form of law."¹ The apprentice was to be taught all the trade processes, not merely one or two. In 1838, a second convention was held which lowered the length of apprenticeship to five years. This was the prescribed time till 1869, when it was made 4 years.

While the workingmen's movement of the late 20's and the early 30's started as a political movement, it crystallized after a few years in the form of a number of organizations existing principally for the purpose of collective bargaining. In these scattered unions regulations concerning apprenticeship were common. The Troy coachmakers, for instance, enacted that only one apprentice should be hired for every four journeymen.²

The International Typographical Union in 1850 declared that the regulation of apprentices was one of its most important purposes.³ The National Association of Hat Finishers which was organized in 1854 had as its basic purpose the limitation of apprentices.⁴ The Iron Molders' Union of North America was directly caused by the excess of apprentices.⁵ Since the average in some sections was two apprentices to one journeyman, the union was anxious to prevent overcrowding of its labor market. The consti-

¹ N. Y. Bureau of Labor Statistics, 1911—*History of Typographical Union No. 6*, p. 156.

² Commons, *op. cit.*, vol. vi, p. 167.

³ *Tenth Census of United States*, vol. xx, "Report on Trade Societies."

⁴ *Ibid.*, p. 10.

⁵ See *Third Report of California Bureau of Labor Statistics*, 1887-88, pp. 215-16.

tution of the National Builders' Union stated that "one of the objects is to devise and suggest plans for the preservation of mechanical skill through a more complete and practical apprenticeship system."¹

It was the control of apprenticeship that was the paramount reason for the organization of the Green Glass Blowers in 1857, and for their reorganization in 1866.² So also with the German-American Typographical Union, the Brotherhood of Carpenters and Joiners, the Painters and Decorators Union³ and the union of shoe-makers known as the Knights of St. Crispin.⁴

With the Civil War, the question of apprenticeship became even more serious. Military life withdrew so many men from industry that a free use of apprentice labor seemed absolutely necessary. Manufacturers, moreover, fostered it as the one ready means of staving off a wage increase.⁵ The expansion of the factory system following the civil war brought with it an increased division of labor and specialization of tasks. All-round apprenticeship consequently became still less common: boys were kept at specific operations and not taught the trade as a whole. This inevitable development caused a fresh outburst of protests from the workmen.

Thus the Chicago Conference of Working Men in 1867 passed resolutions declaring that "a great difficulty exists in many mechanical branches from their being over-stocked

¹ Founded in 1887. For discussion see G. C. Sikes, "Apprenticeship in the Building Trades," *Journal Political Economy*, vol. ii, pp. 397 ff.

² *New Jersey Bureau of Statistics of Labor and Industries*, 1887, pp. 77-84.

³ *Ibid.*, pp. 89-94.

⁴ See Don D. Lescoghier, *The Knights of St. Crispin*.

⁵ Fite, *Social and Industrial Conditions During the Civil War*, pp. 187-88.

with apprentices and as the time has come when the apprentice system is being more extensively used to the detriment of those who have spent years in making themselves proficient in their different trades."¹ The unions in certain trades, moreover, continued sporadically to protest against alleged abuses of the apprentice system and against an excess amount of juvenile labor. For a long time after the Civil War the Iron-moulders complained that the trade was suffering from a surfeit of half-trained apprentices or "berkshires" as they were called; in many plants it was stated that there were as many as four apprentices to one journeyman.² Other trades to complain from time to time of being overcrowded with apprentices and learners were the leather workers,³ the bakers⁴ (1885), the table-knife grinders,⁵ the wall-paper workers,⁶ the gold-beaters in Philadelphia;⁷ the plumbers and printers in New York⁸ (1885), the cigar-makers,⁹ the carpenters in Chicago,¹⁰ and the musicians¹¹ (1890-96).

The employers verbally at least stood out for the right to hire an unlimited number of apprentices. The attitude which the employers generally assumed is well

¹ *Documentary History of American Industrial Society*, vol. ix, p. 192.

² *Iron Moulders Journal*, August, 1896, p. 1.

³ *Leather Workers Journal*, 1904, pp. 521-22.

⁴ *American Federationist*, Sept., 1912, p. 597.

⁵ *Ibid.*, p. 561.

⁶ *Ibid.*, Sept., 1903, p. 847.

⁷ *Ibid.*, Sept., 1903, p. 897.

⁸ *Fourth Annual Report N. Y. Bureau of Labor Statistics* (1886), pp. 113-16.

⁹ Motley, *Apprenticeship in American Trade Unions*, p. 23.

¹⁰ *The Carpenter*, vol. xxx, no. 5, May, 1910, pp. 9 ff.

¹¹ Owen Miller in the *American Federationist*, November, 1912, pp. 871, et seq. Also John R. Commons, "The Musicians of New York and St. Louis," *Quarterly Journal of Economics*, vol. xx, pp. 419-22.

illustrated by a statement of an Albany moulding firm to the employees whom they had locked out: "We claim the right to employ any such number of boys as we may find advantageous, and also expect each molder to employ a helper,"¹ The pamphlet went on to say that some western firms encouraged the journeymen to have "four, five, six or even seven helpers apiece."² The helpers were to do the heavy work and enable the molders to earn \$8 to \$10 a day. The fact that these same helpers would later menace the journeyman's job was not mentioned.

The unions sought to regulate apprenticeship both, (a) by legislative enactment and (b) by trade-union regulation.

The movement for state legislation to control apprenticeship began in the late 60's and reached its climax in 1870-71. Thus the Chicago Conference of Workingmen in 1867 resolved "that it is the opinion of this body that it is highly important that the legislatures of each state should use their influence to secure such laws as will protect employers, apprentices, and journeymen." The unions of machinists, blacksmiths, stovemolders, shoemakers, cigar-makers, printers, brick-layers, plasterers, and stone-cutters all made similar demands, including a definite time limit and the limitation of numbers, while the machinists, blacksmiths, and stove-molders advocated state legislation, as well.

The labor movement of the 60's accordingly tried to effect the full legal recrudescence of apprenticeship. It advocated in general (a) that the apprenticeship period should be not less than 5 years; (b) that the number of apprentices be strictly limited, (c) that the employer be compelled to teach his apprentices the whole trade, not merely specialized parts of it; (d) that the employer should

¹ Perry, J. S., *Some Considerations Presented to the Molders Lately Employed by Perry & Co.*, Albany, N. Y., p 7.

² *Ibid.*

be responsible as formerly for his apprentices' moral education, (e) that a legal system of indenturing be re-established.

6. *The New York Apprenticeship Law and its Enforcement*

As a result of this agitation, Massachusetts, Illinois and New York actually passed apprenticeship laws, while similar measures were nearly enacted in Pennsylvania and Ohio. The New York law of 1871 provided:¹ (1) A written indenture must be drawn up and signed by both parties before an apprentice could be taken. (2) This indenture must be based upon the following terms: (a) the term of apprenticeship was to be not less than three and not more than five years; (b) the employer must provide the apprentice with suitable board, lodging and medical attention; (c) the employer must teach or have the apprentice taught "every branch of his or their business;" (d) the employer must give the apprentice a certificate upon the satisfactory conclusion of his service. (3) Penalties for violation of indentures: (a) On the part of the apprentice.—If the apprentice would not try to learn his trade or serve faithfully, he was to forfeit his back pay and the indenture would be cancelled. If he ran away before his term of service expired, he was liable to a jail sentence; (b) On the part of the employer.—If the employer did not care for the apprentice suitably according to the terms of the indenture and the provisions of the law, he could be sued by the apprentice or by his parents. If it could be shown that the employer had neglected his duty, the court was to cancel the indenture and impose a fine of not less than \$100 and not more than \$1000, which was to be paid to the apprentice or to his parent or guardian.

¹ For text of the Act see *Laws of New York, 94th Session*, vol. ii, pp. 2147-2150, chapter 934. For recommendation for apprentice legislation see Message of Governor Hoffman in *Messages of the Governors* (Lincoln edit.), vol. vi, p. 123.

It will be noticed that the act did not attempt to limit the number of apprentices although in other respects it embodied the demands of the unions. As, however, it depended for its enforcement upon the complaint of the parties interested to the courts, it was seldom enforced at all and did not better the situation. In 1888 the enforcement of the Act of 1871 was made a duty of the factory inspectors,¹ but their work in this direction was almost fatally crippled by an opinion in that year by the State Attorney-General. He ruled that the law did not apply in the case of a minor for whom there was no written indenture binding the employer to teach the youth a trade. The opinion read in part as follows:² "It does not appear that this act was intended to affect the right of a parent or guardian to procure general employment for a minor. Minors might be employed for the purpose of learning the art or mystery of a trade without having attached to them all the incidents connected with apprenticeship." This definition therefore not only excluded the general mass of juvenile labor, but even drew a distinction between learning a trade and apprenticeship, and declared that the former was not proof of the latter.

This ruling made the law almost impossible to enforce, for as the factory inspectors stated: "In but few instances would the employer acknowledge that he employed his minors as apprentices to teach them a trade, but almost invariably asserted that he employed them "generally" or in sub-divisions of the trade in which they were most apt or familiar."³

¹ Chapter 437, Laws of 1888, see also *Seventh Annual Report of the Factory Inspectors*, pp. 52-54.

² See *Fourth Annual Report Factory Inspectors*, Assembly Documents 113th Session, vol. iii, pp. 33-42 (1890).

³ *Ibid.*, p. 36.

It is significant to note that no demand for enforcement of the law was made to the factory inspectors by labor unions, parents, minors or employers, and few cases came up under it. The laws in the other states met the similar fate of non-enforcement and became virtually dead-letters.

7. *The Nationalization of Trade Union Restrictions upon Apprenticeship*

Contemporaneous with the attempt to regulate apprenticeship by legislation went the attempt to regulate it by trade-union enactment and collective bargaining. At first the formulation of the rules governing apprenticeship was left largely to the local unions. This of course proved inadequate. A national problem could not be regulated by the uncoördinated rules of local bodies. In those cities where the unions were weak or non-existent, large numbers of apprentices or juvenile workers could be employed and taught only a fraction of their trade. Many of these, upon completing their service and failing to secure a journeyman's position, would go to other cities and menace the position of union workmen there. Often, moreover, a weak union would prefer to admit men as full-fledged journeymen even though they had served no apprenticeship, believing that these men menaced them less inside the organization than without.¹ These entrants could then go to other cities, present their union card, and be treated as master workmen. Impotent as the locals proved to be, the national bodies were nevertheless slow in shouldering the responsibility for regulation.² As late as 1890, only seventeen of forty-eight trades unions, comprising 16½% of the total membership, regulated or

¹ The unions of Louisville, Kentucky, followed this policy, see *Leather Workers Journal*, April, 1904, pp. 521-22.

² See T. W. Glocker, *The Government of American Trade Unions*, pp. 35-36.

attempted to regulate apprenticeship through their national bodies. Ten had general policies of restriction but surrendered to the local unions the power to enact the concrete regulations and to enforce them while twenty-one made no mention of apprenticeship whatsoever.¹ By 1904, however, as Professor Motley points out in his able monograph, 70 out of 120 national unions, comprising 900,000 members out of a total of 1,675,000, had enacted apprenticeship regulations. This means an increase in 14 years from 16½% to 54%.²

8. *The Effect of Trade Union Restrictions*

This much vexed question of apprenticeship regulation was however wellnigh negligible as a cause of strikes. From 1881 to 1886 inclusive, strikes affected as many as 22,300

¹ See E. W. Bemis, "Relation of Trades Unions to Apprentices," *Quarterly Journal of Economics*, vol. vi, pp. 76-93.

² Interesting features of apprenticeship are the age of entrance and the wage as compared with that of a full fledged worker. The age of entrance varied. A New Jersey study shows the trades with an early entrance and those with a comparatively later age of entrance. *Report New Jersey Bureau of Statistics of Labor and Industries*, 1891, pp. 185-186.

Those having a comparatively small per cent of their numbers who began their apprenticeship before 16 were:

Plumbers	3.6%	Painters	11.7%
Bricklayers & Masons ...	6.6%	Potters (Kilnmen)	18.8%
Glass Blowers		Printers	30.0%
a. Green bottle	10.0%	Carpenters	18.8%
b. Flint	12.6%	Hat Makers	28.0%
c. Window	2.7%		

The following statistics from Ohio for 1885 (*Report of Ohio Bureau of Labor Statistics 1885*, pp. 45-47), indicate the relative wage which the apprentice received in comparison with the journeyman.

Trades	Av. yearly wage of Journeyman	Av. yearly wage of Apprentice	Per cent Apprentice to Journeyman wage
Iron Molders	\$497.61	\$232.36	46.6%
Cigar-Makers	\$413.59	\$142.55	34.4%
Typographers	\$623.68	\$154.85	24.8%

The wage of the apprentice ranged then from one-quarter to one-half that of the journeyman.

establishments, yet in only 213 or about 1% of the total, was the question of apprenticeship paramount. In the period of 1885-1893 there were strikes involving over 22,000 establishments, of which only 161 or less than 1% were caused by disputes over apprenticeship.¹

As a cause of lockouts, apprenticeship restrictions were of course much more prominent. From 1881 to 1886, 2214 establishments locked out their employees and ² in 169 or 7.7% of these cases, opposition to union restriction of apprentices was assigned as the principal cause. 167 of these cases occurred in the single year of 1886.

The opposition to apprenticeship regulations found expression in the claim that they "prevented the American boy from learning a trade." It was alleged that the unions, by limiting the number of apprentices, deprived boys of the opportunity of becoming skilled workers. A Boston paper voiced this view when it said, "A liberal apprenticeship will do as much as anything else to put a wholesome restraint upon trade-union tyranny and to make the mechanic arts again desirable and serviceable to the sons of American citizens."³ Exponents of this view have been both numerous and insistent.⁴ A confusion of ideas, however, lies at the bottom of it. It assumes that an increase of apprentices is all that is needed to teach boys a trade, that mere numbers will ensure training. It ignores the fact that just because of the former surplus of apprentice labor, boys were not taught the whole trade, but only a few detailed processes. The more boys there are free to enter

¹ *Report of Bureau of Labor Statistics of Minn.*, pp. 312-314.

² *Ibid.*, p. 316.

³ *Boston Journal*, July 15, 1890.

⁴ In the decade 1900-1910, Mr. Anthony Ittner, chairman of the committee on Industrial Education of the National Association of Manufacturers, became the chief defender of the so-called "American Boy."

a trade, the less incentive the manufacturer is likely to feel to give any one of them a thorough training.

In any case, however, the actual burden of restriction appears to have been very slight. In the first place the unions were relatively weak. Moreover, had they really prevented boys from learning a trade in those industries in which they were strong, we should at least expect to find that both boys and employers would take advantage of what opportunities remained to them. If, for instance, the allotted ratio was one apprentice to four journeymen, we should expect to find at least that proportion of apprentices actually at work. As a matter of fact, taking the country as a whole, *there were not as many apprentices as the unions allowed.*

Apprenticeship therefore decayed primarily because of other forces than trade union regulation. As early as 1869, a Massachusetts investigation showed that employers were realizing that it was unprofitable for them to employ apprentices. Forty-six out of fifty-two employers stated that they had served an apprenticeship in their business, but only twenty-seven were now employing apprentices. Only 19 believed apprenticeship to be valuable.¹ A Philadelphia study of the following year shows that there were but 3,500 apprentices in 8,000 establishments in that city with a total working force of 92,000 men.² This was a ratio of approximately one apprentice to twenty-five journeymen, a number not sufficient to keep a trade alive where apprenticeship the sole means of recruiting workers. A comparison of the number of apprentices to journeymen permitted by eight national unions with the number actually

¹ *Report of Committee of Massachusetts Charitable Association, "Relation of Apprentices of their Employers,"* pp. 3-6.

² Whitney, James, *Apprenticeship*, 1872 (published in the *Philadelphia Social Science Series*), pp. 12-13.

employed in Massachusetts in 1890 shows some interesting results.¹

<i>Name of Union</i>	<i>Ratio of Apprentices to Journeymen (union regulation)</i>	<i>Actual Ratio in Mass.</i>
1. Pattern Makers Union	1 to 4	1 to 48
2. Journeymen Tailors Union	1 to 1	1 to 12
3. Silk & Fur Hat Trimmers	1 to 10	1 to 288
4. Wood Carvers Association	1 to 5	1 to 25.5
5. Form Makers Union	1 to a shop and 1 extra for every 8	1 to 51
6. Typographical	1 to 5	1 to 9
7. Carpenters	1 to 6	1 to 62
8. Plumbers	1 to 4	1 to 44

In Ohio, however, there was apparently no such paucity of apprentices. In 1884, an investigation² of 74 plants in the machinists, molders, blacksmiths, wood-carvers, pattern-makers, coopers, cigar-makers, carpenters, brick-masons and compositors trades showed a total of 275 apprentices to 1385 journeymen or a ratio of 1 to 5. The case of the cigarmakers, typographers, and iron-molders was even more striking. In the cigar industry there were 609 apprentices and 809 journeymen, or a ratio of 1 to 1 $\frac{1}{3}$; in the iron molders there were 521 apprentices and 1451 journeymen or a ratio of 1 to 3; in the typographical plants there were 211 apprentices and 791 journeymen or a ratio of 1 to 3 $\frac{3}{4}$. Here quite evidently the trades unions did not effectively restrict opportunities to learn the trade, for the number employed was far in excess of the number set by the union.

9. *The Decline of Apprenticeship*

Taking industry throughout the country as the standard however, apprenticeship was rapidly decreasing in impor-

¹ Bemis, E. W., "Relation of Trades Union to Apprentices," *Quarterly Journal of Economics*, vol. vi, pp. 83-84.

² *Report of Ohio Bureau of Statistics of Labor 1884*, p. 261.

tance. The Census statistics show a steady decline in the ratio of apprentices in the manufacturing industries as a whole.¹

<i>Year</i>	<i>Number of Apprentices</i>	<i>Total number Employed in Manufacturing and Mining</i>	<i>Ratio</i>
1860	55,326	1,850,034	1 to 33
1880	44,170	3,837,112	1 to 87
1890	82,057	5,091,293	1 to 62
1900	81,603	7,112,987	1 to 88
1910	118,964	11,623,605	1 to 98

The figures for 1870 are worthless. In the census although apprentices were counted as a special class, they were enumerated under their particular trade without definition. While it is possible that there were some apprentices who were not listed as such by the Census, it is probable that their number was not appreciable.

An apparent paradox now confronts us. If the number of apprentices was actually decreasing, why did so many of the unions still insist that their trades were being overcrowded with apprentices? The answer is twofold: In the first place, though the general decline in the number of apprentices was genuine, overcrowding did still exist locally in some trades. such as plumbing, cigar-making, and typography.

In the second place, we must remember that "apprenticeship" was a term often employed loosely by the unions to designate juvenile labor. Boy labor was on the increase, and the laboring men were really enveighing against this when they spoke of apprentices. The old idea was that no child should be in industry unless he was actually learning a trade. When the numbers of employed children were

¹ 8th Census, 1860, pp. 565-677. 10th Census, 1880, vol. i, "Population," p. 746. 11th Census, 1890, vol. iii, p. 397. 12th Census, 1900, vol. ii, pp. 566-7 (this includes helpers as well, so number of Apprentices was probably less). 13th Census, 1910, vol. iv, p. 91.

observed, it was thought that they must be in this class. And when it was discovered that they were not being taught as apprentices should be, the cry was immediately raised that apprenticeship was being abused. The fact was not clearly grasped that a new class of workers was being created: namely, children who were valued for their immediate labor, not for their ultimate productivity.

During the eighties unions sought recourse again in legislative enactment. The Federation of Organized Trades and Labor Unions, the precursor to the American Federation of Labor, at its inception in 1881 resolved as one of its fundamental principles "that necessity demands the enactment of uniform apprentice laws throughout the country: that the apprentice to a mechanical trade may be made to serve a sufficient term of apprenticeship from three to five years, and that he be provided by his employer with proper and sufficient facilities to finish him as a competent workman."¹ Laws which should regulate the term of service and the conditions of employment and compel the master to teach the whole trade, were specifically advocated both in California and New York.² The states, however, refused to take action.

The manufacturers of the day were not particularly concerned with the fact that the decadence of apprenticeship had destroyed the only means of recruiting skilled workers. Down to 1885, the country had not seriously faced the problem of machine technology, even though manufacturing was becoming predominant. Though plunged into large scale production, America retained the ideas of handicraft and agriculture. Unconsciously, however, American industry

¹ *Report of First Annual Session of the Federation of Organized Trades and Labor Unions of the United States and Canada*, p. 3.

² See *Fourth Annual Report of Statistics of Labor*, pp. 197-203. *California Bureau of Labor Statistics*, 1887-88, pp. 94-97.

was taking that turn which now renders it characteristically American. High wages plus an abundance of raw materials forced the manufacturers to resort to quantitative, mass production. Qualitative standards of workmanship were impossible in the face of the high wage schedules. The machine process became more automatic, the subdivision of labor more extended, the workmen more nearly reduced to the status of machine tenders. All-round trade training ceased to be necessary for many.

One of the theories advanced for this lack of interest upon the part of the employers is that we were then recruiting our skilled workers from abroad and therefore did not need to train them at home. Many of the contemporary pamphleteers were of this opinion.¹ The theory explains the awakening of interest in industrial education during the decade which followed 1900 by the fact that the "new" immigration from southeastern Europe was far more unskilled than the "old" immigration from northwestern Europe and that in consequence, the United States was compelled to recruit her skilled workmen from her own population.

Though this view is endorsed by practically all recent works on immigration,² it is not borne out by a careful statistical study of immigration in the two periods. Thus skilled laborers formed but 11.5 per cent of the total immigration into the country for the period 1871-82 inclusive while 15.0% of the total immigration for the years 1899-

¹ See James Whitney, *Apprenticeship*, Philadelphia, 1872, Mr. J. S. Perry, *Some Considerations Presented to the Molders lately Employed by Perry & Co.*, p. 7.

² Jenks and Lauck, *The Immigration Problem*, p. 31, express the orthodox view. Hourwich, I. A., *Immigration and Labor*, pp. 67-68, dissents from this. His book is in general so polemic and so permeated with the *post hoc ergo propter hoc* fallacy that his views on this point have not received the attention that they merit.

1910 inclusive were skilled.¹ If we eliminate all these without occupations (chiefly women and children), the percentage of skilled of those with occupations in the early period was 23.2 and 20.3 in the later period. When the immigration from Northwestern Europe and from Southeastern Europe is compared for the respective periods when each was dominant, it will be seen that immigrants from Northwestern Europe in the 70's and early 80's were as unskilled as the immigrants from Southeastern Europe in the decades preceding and following 1900. Popular confusion has arisen on this point because the two immigrations were compared by the Immigration Commission for the same period of time (1899-1910), when they should have been compared for the periods when each was in turn dominant.²

It should not be inferred from the foregoing discussion that apprenticeship is, as so many have claimed, dead. As we shall see, many plants have apprenticeship systems to train high-grade mechanics, but in general the system can be said to be declining as industry becomes more and more

¹ The statistics for 1871-82 were compiled from the *Annual Reports of the Bureau of Commerce and Navigation*. Those for 1899-1910 were taken from *Report of United States Immigration Commission*, vol. i, p. 100. The definition of skilled has been made coterminous for the two periods. See my article, "Is the New Immigration more Unskilled than the Old"? *Quarterly Publications American Statistical Association*, June, 1919, esp. pp. 396-97.

² In my article, "Is the New Immigration more Unskilled than the Old," *op. cit.*, pp. 393-403, I have pointed out the fallacy of the Immigration Commission and Messrs. Jenks & Lauck in drawing conclusions as to the relative skill of the "new" and the "old" immigration on the basis of a comparison for the same period. These terms should include (1) a space relationship to differentiate between the peoples of Northwestern and Southeastern Europe but also (2) a time relationship to compare the immigration of one period with a previous one. The article shows that if the immigration from Northwestern Europe for 1871-82 is compared with that of Southeastern Europe for 1899-1910, it will be seen that it did not possess a larger number of skilled workmen, if indeed it possessed as many.

specialized and automatic. It is not at present of great actual importance as a method of trade training.

10. *The Recrudescence of Apprenticeship in Wisconsin*

As the author has pointed out elsewhere,¹ despite this general decline, the apprenticeship system in Wisconsin has, during the last few years, shown unmistakeable signs of growth. The industrial education law of 1911 began the regulation of apprenticeship by prescribing that every apprentice should receive not less than five hours a week of instruction in English, citizenship, business practise, physiology, hygiene, the use of safety devices, and such other branches as might be approved by the state board of industrial education. This law also provided for the registration of all apprenticeship indentures.

In 1915, the apprenticeship laws were amended so that they included: (1) Compulsory indenture. Every apprenticeship contract was to be made in writing and a copy filed with the state industrial commission. (2) Time for instruction in the continuation school. A minimum of five hours a week was required to be devoted to instruction and the employers were required to pay the apprentice for this time. (3) Regulation of hours and wages. Every indenture was to state the number of hours to be spent in work. Not more than fifty-five hours a week (including instruction) was, however, permissible. Apprentices over eighteen years could work overtime not to exceed thirty hours a month, and were to receive for this one and one half ordinary wage rates. (4) Specification of the particular processes to be taught the workmen and the approximate time to be spent on each. (5) Supervision and direction of the system by the state industrial commission. The

¹ "The Recrudescence of Apprenticeship in Wisconsin," *School and Society*, vol. vii, pp. 22-23, Jan. 5, 1918.

commission was given the power to classify trade and industries; to construct and supervise the contracts, and to act as the mediator for differences between apprentices and employers.

The commission was wise enough to create a state apprenticeship board to administer the act, composed of representatives of the employers, of the unions, and of the state continuation schools. Perhaps most important of all was the appointment of a full-time supervisor of apprentices who was also to act as the secretary of the board.

The board has succeeded in enlisting the confidence and cooperation of both employers and employees. Its most important accomplishment has been the formation of proper standards of apprenticeship in different trades and industries. Under the old relation of apprenticeship, the duties of apprentice and master were loosely defined. With the coming of the machine era, it became impossible to determine what processes must be taught the apprentice and what might be omitted. The clear definition of what is to be included under apprentice training removes much ambiguity and its attendant opportunity for abuse.

The board has also worked out a uniform indenture blank and has issued diplomas to boys who have successfully completed their apprenticeship. These measures help both in standardizing conditions and in offering an incentive for the apprentices to do their best and to complete their apprenticeship.

Statistics show that the results of this system have been most satisfactory. Under the law of 1911, the following number of apprentice contracts were entered into: 1912, 142; 1913, 260; 1914, 220, and 1915, 163. The 1915 law first became fully operative for the year 1916, and in that year a total number of 468 new contracts were filed. This was an increase over the previous year of approximately

200 per cent. and an increase of 80 per cent, over the highest mark in the four previous years. The distribution, by trades and localities, of the total number of apprentices is very interesting. Five hundred and sixty-six, or 58 per cent., of the 969 apprentices registered, were in the machinist trade; 121, or an additional 12 per cent., were pattern-makers. The number of apprentices in such trades as tool-making, carpentering, plastering and painting was very meager. Seven hundred and forty-four, or 77 per cent. of the total for the state, were concentrated in Milwaukee. The number of supervised apprentices has steadily grown until it now includes several thousand. Wisconsin, however, is the only state to show such a development.

II. Causes for the Decline of Apprenticeship

Why has this system of apprenticeship once so prevalent, now decayed? For two main reasons: (1) Because there is no longer the need for as large a proportion of skilled workers in industry as formerly. The development of machinery and the fast increasing specialization of labor has rendered it unnecessary for the vast majority of factory operatives to know more than one, or at most a few, processes. Only a few need to have the all-round knowledge formerly required and which apprenticeship was designed to give. The very reason for apprenticeship, in its former sense of a thorough mastery of a trade, is thus largely removed.¹ (2) Because it has come to be thought unprofitable by individual employers, workmen, parents, and the boys themselves to train even those all-round workmen that are needed.

¹ It should not be inferred that this removes the necessity for training. Not only is some training required for the specific occupations but the broader civic, intellectual, and moral functions of apprenticeship need, not only to be carried out in the modern situation, but to be improved.

(a) First, apprenticeship was unprofitable to the individual manufacturer. To his mind it confused the function of the shop with that of the school. The apprentice's aim was to learn as much as possible: the employer's aim was to produce as cheaply as possible. These two ideas are generally antagonistic. The manufacturer under competitive conditions must run his machines at the highest possible efficiency. That cannot be accomplished by transferring a worker as soon as he has mastered any given process. The initial expense of "breaking in" a man or boy is too great for that. Once the employee has mastered the workings of a particular machine, it is more profitable for the employer to keep him there than to move him on. This means that the apprentice is not taught the whole process, but merely a specialized part. His position is divested of its trade educational features. While ostensibly an apprentice, he is actually a mere worker devoid of training.

Apprenticeship is moreover rendered still more unprofitable for the employer by the fact that once he has trained an apprentice, there is no guarantee that he can permanently enjoy his services. The apprentice costs more at first because of the disarrangement of the plant, time spent in training, and spoiled products. While learning he is generally unprofitable. The only opportunity for the employer to recoup is to enjoy his increased productivity when he is once trained. Once the apprentice is trained, however, other firms who did not go to the expense of teaching the boys themselves can hire him away. The first employer cannot afford to pay as high wages as the second, because he already has more invested in the boy, for which he must get a return. A premium is thereby placed upon not training apprentices. Firms rely upon stealing rather than training hands. Though it would be a benefit to the in-

dustry as a whole to have a supply of well-trained apprentices, to the *individual firm* it usually spells a loss.¹

(b) In the second place the workmen already in the shop dislikes apprenticeship. The boy is his potential rival. He is afraid that the learner may ultimately supplant him. In consequence, he does not show him all of the tricks of the trade. Painters' apprentices say that it is practically impossible to get a master who will teach them thoroughly. "Let the kid pick it up for himself" is the general sentiment towards the novice.

Every moment the workman spends in teaching the apprentice moreover is a moment withdrawn from his own task. He is valued by his employer as a producer, not as a teacher of others. Furthermore, machinery, unlike hand-work is not susceptible of interruption; it demands constant attention, and there is little leisure in which to instruct one's neighbor. This concentration upon the immediate machine and its product is especially intense where piece-work is the rule. Here a direct pecuniary loss will follow any attention to others. In the clothing trades, where piece-work prevails, the novice is given but little instruction, although she may be operating dangerous high-power machines.

Finally, even if the workman should be willing to give instruction, he is generally incapable of doing so. He has little all-round training himself and his trade knowledge is generally confined to but a few operations. Nor is the foreman much better adapted to act as a teacher. His chief function is to speed up the operatives. He is not necessarily a highly-skilled workman himself, and he tends to be hostile or at best indifferent to an operative primarily learning

¹ This is merely another instance of the falsity of the *laissez-faire* doctrine that each man by pursuing his own interest thereby pursues the interest of the whole.

rather than producing. Indeed the whole spirit of the modern work-shop is unfriendly to the conception of it as a place for the development of skilled craftsmen. Skill is a matter of time, and modern production is in a hurry.

(c) Nor is apprenticeship a system that finds favor with many parents. The ambitious among them are discouraged by the uncertainty of the training offered; and what is more important, the poor are held back by the financial sacrifice it involves. To apprentice a boy instead of setting him to work means a very considerable immediate loss in wages. That this loss will be more than made up in the future is small comfort when the present is heavy with want. The superior initial wage of the unskilled worker looms large in such cases, and it is only the unusual parent who will stand out against it.

(d) Finally, even the boy himself is hostile to apprenticeship. Like his parents, he sees the larger wage which the unskilled worker gets. He does not see that this wage will not increase. Moreover he relishes his independence. He does not wish to bind himself legally or even verbally for a prescribed period of time. He is restless and wishes to change. The prospect stretching out before him of years of steady work at one industry bores him sadly.

Apprenticeship, moreover, presents itself as an opening into the manual trades alone. It spells overalls and greasy hands. These are associated in his mind with foreign labor and the jokes of his schoolfellows. Ten to one he prefers the social prestige of any sort of "clean-collar" occupation, so he becomes errand-boy, messenger-boy, office-boy,—and skilled craftsmanship goes by the board.¹

¹ For descriptions and accounts of the causes for the downfall of the apprenticeship system, see: *Mass. Committee on Relationship of Apprentices to Employers* (1869), pp. 7-11. Sykes, G. C., "Old and New

To the extent therefore that the decline in apprenticeship has been due to faulty organization and to indifference, the Wisconsin method offers hope for a rehabilitation of the old system. To the extent, however, that it has been caused by the inevitable specialization of the machine era and by the individualistic conduct of industry, it presents no real remedy.

Conditions of Apprenticeship in the Buildings Trades," *Journal Pol. Econ.*, vol. ii, pp. 408 ff. Wright, *Bulletin Bureau of Education*, 1908, no. 6, pp. 84-86. Stevens, G. A., "Influence of Trade Education upon Wages," *Journal of Pol. Econ.*, vol. xix, pp. 19-24. Weyl and Sakolsky, "Conditions of Entrance to the Principal Trades," *Bull. Bureau of Labor Statistics*, no. 67.

CHAPTER IV

PRESENT CONDITIONS OF CHILDREN IN INDUSTRY

For the average child of from fourteen to sixteen, school life is over and industrial life has begun. Whatever his reasons for leaving school, whether poverty or apathy towards the school itself, he has little idea what particular trade he wishes to follow. He does not know which occupations need boys nor which will afford him a future. He takes the first job that he finds, an unskilled job; works for some time, perhaps a few weeks or a few months; finds that there is no opportunity to learn the trade, that the pay involved does not loom as large as it did at first; he is tired by the monotony of the task, and quits. He runs about the streets and casually looks for another position. After a while he finds it. It is another unskilled job. He works a short time at this task, and then leaves it as he did the first. And so he drifts from job to job, from industry to industry, still unskilled, and exposed to all the social and industrial evils which threaten adolescence. Once grown, he is crowded out of his job forever by another younger crop of workers, and finds himself one of the class of the permanently unskilled with the attendant low wages and unemployment of his class. He had nothing to sell but his youth; he sold it, and received nothing in return.

1. *Early age at which children leave school.* Children leave school early. How early and in what numbers it is not easy definitely to determine. The census figures for

1910¹ on the proportion of children in school afford one source of information.

<i>Years</i>	<i>Number attending school</i>	<i>Percentage of total number of children of that age</i>
11-12	1,555,301	91.2
12-13	1,716,310	89.8
13-14	1,574,253	88.8
14-15	1,501,456	81.2
15-16	1,175,009	68.3
16-17	943,511	50.6
17-18	629,866	35.3

It is important to notice that nearly one-third of the 15-year-olds and approximately one-half of the 16-year-olds were not in school. The National Committee on Vocational Education in 1914 found that there were 345,666 children of 14 and 546,216 children of 15, who were not attending school, making a total of 892,882 children, or nearly 900,000 between 14 and 16 out of school.² Doctor L. P. Ayres, after a study of 58 cities, estimated that in the United States 250,000 children of 14 years fail of graduation from the grammar grades and leave school forever. He also declared that of the 200,000 children of 14 who do graduate, a large proportion also leave school.

Probably the most satisfactory study of all is that made by Professor E. L. Thorndike in 1908. His conclusions, for American cities of 25,000 and over, were that for every 100 entering pupils, the schools retained

¹ *13th Census*, vol. i, p. 1099.

² *Report of the Commission on National Aid to Vocational Education*. House Doc. 1004, 63rd Congress, 2nd Session, vol. i, p. 104.

³ Gulick and Ayres, *Why 250,000 Children Leave School*, Russell Sage Foundation, Department of Child Hygiene, *Bulletin* 77, p. 1.

⁴ Bureau of Education, 1908, *Bulletin* No. 4, p. 11.

90	to grade 4			
81	" "	5		
68	" "	6		
54	" "	7		
40	" "	8	(Usually last grammar grade)	
27	" "	1st Year	High School	
17	" "	2nd	"	"
12	" "	3rd	"	"
8	" "	4th	"	"

On an age calculation taking as its base 100 school pupils at the age of eight, the school retained: ¹

<i>Years</i>	<i>Per cent</i>
10-11	100
11-12	98
12-13	97
13-14	78
14-15	70
15-16	47
16-17	30
17-18	16.5
18-19	8.6

Several interesting facts emerge from these statistics: (1) that only 40 percent of the children finish the grammar school: (2) that 19% drop out in the 13th year, while only 8% drop out in the 14th year. This seems to indicate that children often withdraw from school before they are legally allowed to do so. This is a commentary upon our method of enforcing school attendance, and permits us to surmise as to the actual enforcement of child-labor laws. (3) it is noticeable that only 47% of the children are still in school during their 15th year. During the four years from 12-15 inclusive, an even 50% of the children leave school.

These statistics of Thorndike for cities undoubtedly present a more favorable picture than would similar data from

¹ *Ibid.*, p. 23.

the country districts. These latter, the draft statistics have shown to give inferior educational opportunities.¹

Criticism of the statistical method which Thorndike followed has been offered,² but similar investigations have tended rather to confirm than to disprove Thorndike's investigation. Thus, Dr. George D. Strayer after compiling in 1911 the school censuses of 318 cities, declared that "in our cities considerably *more than half* of the children are eliminated between the ages of 13 and 15 inclusive."³

From these statistics it is safe to conclude (a) that there are approximately 1,100,000 children from 13 to 16 who have left school permanently, (b) that the school mortality during these years is at least 50% of those who began school before 13, (c) that only 40% of the children ever finish the grammar grades, (d) that approximately only 8% finish their high school education.⁴ It is quite possible that this latter percentage is now somewhat higher and may increase still more.

2. *Reasons for leaving school.* Why do these children leave school and go to work? This is not easy to determine because the reasons assigned both by parents and by

¹ Thus 21 per cent of the white men and 51 per cent of the negroes in the national army were illiterate. Henry Wembridge, *The Southern Illiterates in the U. S. Army, School and Society*, Nov. 6, 1920, p. 424.

² L. P. Ayres, *Laggards in Our Schools*, pp. 66-72.

³ G. D. Strayer, *Age and Grade Census of Schools and Colleges in the U. S.*, p. 11, Bureau of Educ., 1911, *Bul. No. 5*.

⁴ Interesting figures are given in Parsons, *Choosing a Vocation*, 1909, pp. 100-6, on the percentage who complete their high school course. The enrollment in Boston High Schools was but 6% of that in the first room grade; in Washington 7%; while in Philadelphia it was but 3%. Parsons makes the mistake however of regarding these percentages as accurate indications of the elimination of school pupils. The classes that were then graduating from high school were in all probability smaller when they began in the primary grades than those then beginning. In other words, Parsons did not allow for the increase of school population in the intervening period.

the children themselves are generally not the real ones. The parent is reluctant to admit that poverty has forced him to withdraw his child from school, while the child is loath to confess that failure in his studies has discouraged him. Moreover, there are generally a complex of causes which operate together, making it almost impossible to determine the exact importance of each.

(a) The Federal Investigation into the Condition of Women and Child Wage-Earners, after a careful study of selected cases in different parts of the country, constructed the following table of causes:¹

<i>Primary Causes</i>	<i>Number</i>	<i>Per cent</i>
Earnings necessary to family support	177	29.3
Child help desired though not necessary	172	28.4
Child's dissatisfaction with school	161	26.6
Child's preference for work	60	9.9
Other causes	35	5.8
Total	606	100.0

The investigation chose as its criterion for deciding whether the labor of the child was economically necessary, a family income of \$1.50 a week for each member of the family, excluding rent and the child's wages. In those families which had an income below this amount, the investigation judged the child's contribution to be actually necessary. On this basis, in only 29.3% of the cases was the cause declared to be predominantly economic.

A study conducted under the auspices of the Public Education Association of New York City in 1912 by Miss Alice Barrows, employed the same standard of necessity, that had been used by the Federal Government. After

¹ *Report on Conditions of Women and Child Wage-Earners in the United States*, vol. vii (Senate Document 645, 61st Congress, 2nd Session, , p. 46.

studying 327 typical cases, Miss Barrows found that in only 20% of the cases was the weekly income of the family (exclusive of child's wages) less than \$1.50 per capita, and consequently decided that poverty was the predominant factor in only 20% of the cases.¹

The Douglas Commission² which in 1906 investigated vocational education in Massachusetts, declared that in only 24% of the cases were the wages of the children necessary for the family support.

But is not the standard set by the federal investigation and followed by Miss Barrows much too low? A per capita weekly income of \$1.50 per week would total for the normal family of five but \$7.50 per week, and if no time or money were lost by unemployment, accidents, or sickness, would thus amount to \$390 for the year plus an allowance for rent. This latter under the most liberal estimate for families of that wage group could not be more than 20% of the family income or \$97.50. This would make the \$1.50 per week per capita allowance roughly equal \$490 a year.

Now this sum was plainly inadequate for the needs of a family of five at the time these studies were made. Chapin in his classic study, estimated that to maintain a physical existence, a family of five in New York City in 1907 require an income of between \$800 and \$900 a year.³ Mrs. Louise B. More, in a similar, though smaller, investigation fixed the absolute physical minimum for a New York City family at \$728 in 1906, but added that to make any provision

¹ Alice P. Barrows, *Report of Vocational Guidance Survey, Bulletin No. 9*, Public Education Association of the City of New York, 1912, p. 8.

² *Report of Douglas Commission on Industrial and Technical Training*, 1906, p. 92.

³ Chapin, R. C., *The Standard of Living in New York City*, pp. 245-248.

for the future the family would require \$800-\$900.¹ F. H. Streightoff, after a detailed study in 1914 declared \$876² to be the minimum upon which the normal family could exist. In 1915, the Bureau of Personal Service of the Board of Estimate and Apportionment made a minimum budget estimate for unskilled laborers of \$845. Streightoff, after a very careful study, concluded that in 1914, \$772 was necessary for the average family of five in Buffalo, New York; excluding rent, the amount necessary would be \$620.³ Kennedy in his study of the cost of living in Chicago, concluded that: "The minimum amount necessary to support a family efficiently in the stock-yards district is \$800 per year, \$15.40 per week."⁴

The federal investigation itself, in its monograph on "Family Budgets of Typical Cotton Mill Workers," fixed a minimum for barely physical needs for a family of five in Fall River, Massachusetts in 1909 at \$484.41 a year and stated that it would require from \$691 to \$732 to maintain a fair standard of life.⁵ The same investigation fixed \$408 as the absolute minimum which Southern Cotton Mill operative could subsist upon although only \$45 was allowed annually for rent.⁶

Some idea of the rigors of this subsistence budget for the South may be obtained from the following statement of the

¹ More, L. B., *Wage-Earners Budgets*, pp. 269-270.

² F. H. Streightoff, *Report on Cost of Living*, Fourth Annual Report (New York) State Factory Investigating Committee, p. 1668.

³ See F. H. Streightoff, *Report on Cost of Living*, Fourth Annual Report (New York) State Factory Investigation.

⁴ Kennedy, J. C. and others, *Wages and Family Budgets in the Chicago Stock Yards District*, p. 80.

⁵ *Report on Conditions of Woman and Child Wage-Earners in the United States* (Senate Doc. No. 645, 61st Congress, 2nd Session), vol. xvi, pp. 233-45.

⁶ *Ibid.*, p. 143.

report: "If the family live within this sum without suffering, wisdom to properly apportion the income is necessary. No tobacco can be used. No newspapers can be purchased. *The children cannot go to school*,¹ because there will be no money to buy their books. Household articles that are worn or destroyed cannot be replaced. The above sum provides for neither birth or death nor any illness that demands a doctor's attention or calls for medicine. Even though all these things are eliminated, if the family is not to suffer, the mother must be a woman of rare ability. She must know how to make her own and children's clothing; she must be physically able to do all of the household work, including the washing. And she must know enough to purchase with her allowance food that has the proper nutrition value."

It is small wonder that the Report states² that the "minimum standard of living is so low that one would expect few families to live on it." The Report concludes that \$600 a year is necessary to maintain a "fair standard" in the South but will permit the children to attend school.³

From the above budgetary it appears evident that the allowance made by the investigation and Miss Barrows of \$1.50 per week per capita exclusive of rent was far too low even for the period 1907-12. The total yearly income was as we saw only \$490 on this basis, and the gap between it and the proper yearly income necessary even for subsistence is thus seen to be very wide.

An estimate of \$2.00 per week per capita exclusive of rent as the "necessity line" for this period, below which children were forced to go to work, seems most conservative. This would be equivalent to a yearly income of \$520 a year

¹ Italics mine.

² *Ibid.*, p. 142.

³ *Ibid.*, p. 152.

plus rent. Again allowing 20% for rent, this would give a yearly income of \$650. Even this income would have been insufficient to maintain physical efficiency in New York City, Chicago, Buffalo and probably in New England in this period, although it might have sufficed in the South.

Adopting this new criterion of an income of \$2.00 a week per member of the family, we find that of the 605 cases of children who were studied by the Federal Investigation that 250 or 41.3% came from families with incomes of less than this amount.¹ Miss Atherton, in her stimulating investigation in 1913-14 of employed girls in Wilkes-Barre, Pennsylvania showed that 44.9% of the girls between 14 and 16 at work came from families with weekly incomes of less than \$2.00 per capita.² This was clearly insufficient for the year in which the study was made because prices had risen appreciably since 1909.

It seems clear therefore, despite opinions to the contrary, that poverty was the primary cause for children leaving school and going to work five or more years ago. Have conditions changed since then and if so, in which direction? Definite information is lacking since there have been no studies recently to determine the economic pressure forcing children to leave school. In June 1918 Dr. W. F. Ogburn brought Chapin's budget and that of the New York State Factory Investigation Commission up to date by the use of the prices then prevailing. Dr. Ogburn found that the Chapin budget would have cost at that time \$1390 and that of the Factory Commission \$1360. Independent investigations at the same time by the United States Bureau of Labor Statistics set the minimum of subsistence budget at

¹ *Report on Conditions of Women and Child Wage-Earners*, vol. xvii, p. 57.

² Sarah Atherton, *Survey of Wage-Earning Girls Below 16 years of Age in Wilkes-Barre, Pennsylvania*, p. 48.

\$1380.¹ It therefore appears that from \$1350 to \$1400 was necessary physically to maintain a family of five in New York City in June 1918. The cost of living for ship builder's families increased 22.5% in New York City from December 1, 1917 to December 1, 1918 and 23.6% from December 1917 to June 1919.²

On the supposition that the increase from December 1, 1917 to December 1, 1918 was evenly distributed, this would indicate an increase of 11.2% from June 1918 to June 1919.

On the average, money wages of workmen have probably not increased as fast as the cost of living and consequently in general real wages have fallen although for a few groups. they have increased. Rubinow³ and Jones⁴ have shown that from 1900 to 1913 real wages for union workmen fell appreciably while from 1913 to 1918, according to Professor Irving Fisher's computations real hourly wages decreased at least 20 percent.⁵ If poverty therefore was the primary cause of 40 percent of the children leaving school in 1910, it is possible that it may be the primary cause for an even larger percentage at the present day.

(b) Even in those cases where the earnings of the child are not needed to maintain a physical basis for life, the desire on the part of both parents and child to at-

¹ W. F. Ogburn, "Standard of Living as a Basis for Wage Adjustments," *Proceedings Academy of Political Science*, vol. viii, no. 2, pp. 107-108.

² *Monthly Labor Review*, September, 1919, p. 108. Using December, 1914 as a base or 100, December, 1917 showed an index of 144.68. December, 1918, 177.28 and June, 1919, 179.22.

³ I. M. Rubinow, "The Recent Trend of Real Wages," *American Economic Review*, December, 1914, pp. 798-817.

⁴ Jones, "Real Wages in Recent Years," *American Economic Review*, June, 1917, pp. 318-330.

⁵ Irving Fisher, *Stabilizing the Dollar*, p. 56.

tain a comfort level operates to force children out of school into industry. Dr. Ogburn placed \$1760 as the amount necessary to maintain a family in a large eastern city in June 1918 on this comfort level,¹ and he fixed \$2200 as necessary to maintain a family of five on this level in August 1919 in Washington, D. C.² When we realize how small a percentage of workingmen's families have incomes of this size, some idea is gained of the economic pressure upon children to leave school.

(c) The present system of school administration is moreover undoubtedly at fault. The teaching is so dull, scholastic discipline so severe, and above all the curriculum has so little connection with life, that the child is discouraged. If he is clever and ambitious, he wants to make his way in the real world at once; if he is dull or in ill health, he is glad to escape from his own apparent failure. He is apt to become either impatient or disheartened and to leave even when there is no pressing financial need.

(d) The sub-normal child is especially apt to leave early. A fourteen-year-old boy in a class of ten-year-olds feels embarrassed and wants to be with those of his own age. Work will allow him to do this, while our modern school does not. Quite naturally he chooses work.

(e) Parents too are often responsible. Many who could afford to keep their children in school, take them out to get the benefit of their earnings. Many parents regard their children as their property and consider it obvious that they should either get the child's wages or have him help at home.³

¹ Ogburn, *op. cit.*, p. 107.

² *Tentative Cost and Quantity Basis Necessary to Support Family of Five in Washington, D. C. in August, 1919*, published by U. S. Bureau of Labor Statistics.

³ *Report on Conditions of Women and Child Wage-Earners*, vol. vii, pp. 50-57.

3. *No guidance given to children.* Little or no attention is paid by parent, child or school, to the work the child should take up.¹ "It was found that in a large number of cases neither the children nor the parents had any definite ambition. To both it seemed the natural thing for the child to go to work as soon as the law allowed, and as for what would come after that, time would show."²

4. *Children predominantly enter unskilled and routine positions.* The jobs that these young people under 16 get are almost all unskilled. They are openings that offer little or no possibility for future advance. The children of that age rarely desire to learn a trade, and seldom have the patience to stick to it. Their carelessness makes the manufacturer and craftsmen refuse to train them. There are, however, numerous unskilled jobs where adult labor is too expensive but where it is profitable to employ children. The Massachusetts Commission on Industrial and Technical Education reported that "the fourteen year old child enters unskilled industry and remains there."³ This commission examined the records of 8057 children in industry between the age of 14 and 16. It classified them on the basis of skill required in their particular trade as follows:

<i>Character of Industry</i>	<i>Number</i>	<i>Per cent</i>
Completely unskilled	3509	43.6
Low grade skilled (giving practically no training)	3648	45.3
Skilled	900	11.1
Total	8057	100.0

Thus only 11% or one-ninth were in industries where they were receiving training.⁴

¹The movement for vocational guidance to remedy this situation will be discussed in a later chapter.

²*Report on Women and Child Wage-Earners*, vol. vii, p. 188.

³*Report of Massachusetts Commission on Industrial and Technical Education*, 1906, p. 57.

⁴*Ibid.*, pp. 31-34, note: The classification of industries as unskilled,

Miss Barrows, after a study of 406 jobs held by 14-16 year old New York children found that in 314 or 71.3% of the cases, absolutely no training was given; that in 41 or 10% of the cases there was a slight chance of "picking up" training; that in 30 jobs, or 7.4%, one process was taught, while in only 21, or 5.2%, was any real supervision or direction given by the employer. A Chicago investigation found that, of 560 boys and girls between 14 and 17 at work, only 35, or less than 7%, were in skilled occupations where they received any training.¹

In Hartford, Connecticut, only 5% of the boys and girls at work under 16 were in skilled employments.² As the Hartford report says "The skilled trades are almost entirely closed to a child of that age (14-16 years). The majority of these children are taking up unskilled odd jobs in factories and stores. In the metal factories, which as a group employ more children than any other type of factory in the city, the younger workers do errand and truck work, stock-boxing, odd jobs about the office, inspecting, assorting, as-

low grade skilled, or skilled was based on the following principles: (1) Work which consisted in a repetition of a single or a few simple operations which one easily and quickly learned and in which one particular operation was not coördinated with other operations was rated as unskilled. (2) A low grade skilled industry was said to be one where a good workman need not know all the operations and where the process did not require much skill or time to master. (3) A skilled occupation was listed as one that required some degree of training before it might be said to be mastered. (4) An unskilled occupation would be learned in a few hours or in a day or two. A low grade skilled occupation requires a few days, a highly skilled job a few months.

Any such classification is of course not wholly capable of being applied as a test with surety to every job. There are always cases in the "twilight zone" that baffle classification. This system is as workable however as any that has been devised.

¹E. L. Talbert, *Opportunities in School and Industry for Children of the Stockyards District*, 1912, pp. 23-24.

²*Vocational Guidance in Hartford, Connecticut*, Report of General Committee, 1914, p. 5.

sembling, light grinding, polishing, feed automatic machines, drilling, testing chains, foot-press work, wiring, unwiring, transferring, cutting out transfers and cleaning type in typewriter factories."¹

A St. Louis investigation² using the three-fold classification of the Massachusetts Commission, found that of 4,335 children, 3842 or approximately 88% entered unskilled occupations; such as bell and hall-boy service, cash, messenger, errand, delivery and wagon service. The most comprehensive survey of this question, undertaken in Philadelphia, examined the industrial records of 13,740 children, and found that only 422 or 3% were in skilled trades.³ That this condition is even more strikingly true of girls is shown by Miss Anna Davis of Chicago,⁴ and by a federal investigation in Worcester, Mass.⁵

It should be borne in mind, however, that all these studies, save that of the Massachusetts Commission, deal with city children exclusively. Conditions in the country communities have not as yet been analysed. Those localities numbering less than 8000 people, contain approximately 58% of the children from 14 to 16.⁶ Whether the percent-

¹ *Ibid.*, pp. 4-5.

² E. E. Lewis, "Studies in Vocational Education," *School and Home Education*, March, 1913, p. 249.

³ J. S. Hiatt, *The Child, The School, and The Job*, p. 5. It is probable that the number actually receiving training was greater than Mr. Hiatt indicates. In his study all children employed in factories were rated as unskilled. The great majority certainly are, but not all. This would increase the percentage of those given trade education.

⁴ Anne Davis, *Finding Employment for Children who Leave the Grade Schools to go to Work*, pp. 19-41.

⁵ Of over 700 girls who left school in Worcester, Massachusetts, during the years 1909-10 only 1% entered the skilled trades. *Bulletin U. S. Bureau of Education*, 1913, No. 17, "A Trade School for Girls, pp. 58-59.

⁶ I have computed this percentage from the raw data given in the *Hand Book of Federal Statistics of Children* (issued by the Children's Bureau), pt. i, pp. 9-43.

age in skilled trades would here be as low as in the urban localities is doubtful. There are fewer street trades, and proportionately more small-scale skilled handicrafts. Even so, however, it seems undeniable that the vast majority of children are in unskilled trades.¹ In Michigan, a somewhat typical state in its distribution of rural and urban population, it was found in 1910 that few children entered the skilled trades.²

5. *Wages of Children are low.* Since child labor is unskilled, and since children have, practically speaking, no independent standard of living, and little or no bargaining power, their wages are low. The 1900 census and the 1905 census of manufactures give only the average wage for children under 16, while the 1910 census fails to make any separate classification of children's earnings whatever. The relative insignificance of the average annual earnings of children under 16 in manufacturing establishments is shown by the following table.

This shows that the wages of children at this period averaged only from \$3.00 to \$3.50 a week and were on the average only one-third that of men.

¹The smallest percentage of 14-16 year old children in unskilled industries that has been disclosed by any investigation is 68% as found in a study of 41 children in Springfield, Illinois. See Odencrantz and Potter, *Industrial Conditions in Springfield, Illinois*, p. 127. Even these figures indicate an unhealthy condition while the overwhelming mass of evidence indicates that they are an understatement of the true situation. A survey of Hammond, Indiana, a town of 20,000 inhabitants, shows that of 94 boys to whom working permits were issued in 1913-14 only 6 could be said to be in position requiring skill, and that of 65 girls, only three were so placed. R. S. Leonard, *Some Facts Concerning the People, Industries, and Schools of Hammond*, pp. 37-42.

²*Report of Michigan Commission on Industrial and Agricultural Education*, 1910, p. 15.

AVERAGE ANNUAL EARNINGS OF WOMEN AND CHILDREN IN MANUFACTURING IN 1900 AND 1905 IN RELATION TO THOSE OF MEN ¹

Class	1900		1905	
	Ave. Annual Earnings	Relative Wage	Ave. Annual Earnings	Relative Wage
Males over 16	\$477	100	\$534	100
Females over 16.....	271	57	298	56
Children under 16..	152	32	176	33

The Investigation into the Condition of Woman and Child Wage-Earners in 1909 showed that in the cotton industry 29.8% of the boys and 37.4% of the girls from 14 to 16 earned less than \$4.00 per week; 56.8% of the boys and 58% of the girls received less than \$5.00, while 76.4% of the boys and 76.1% of the girls received less than \$6.00 weekly.² In the glass industry, 17% of the boys under 16 received less than \$3.00 a week; 32.4% less than \$4.00 a week; 58.6% less than \$5.00; and 81.2% less than \$6.00.³ 38% of the girls in the same industry received less than \$4.00 a week and 80% received less than \$5.⁴ 59% of the boys under 16 and 53% of the girls in the silk industry of New Jersey received less than \$4.00 a week, while in Pennsylvania 86% of the boys and 87% of the girls fell in this class.⁵ Finally 98% of the female workers under 16 in miscellaneous industries were found to be earning less than \$6.00 a week.

6. "Turnover" of juvenile labor exceedingly high. Not only is the typical child's job unskilled and pitifully ill-

¹ Compiled from *Census Report on Manufactures*, 1905, p. lxxi.

² U. S. Bureau of Labor Statistics, *Bulletin* 175, p. 62.

³ *Ibid.*, p. 129.

⁴ *Ibid.*, p. 151.

⁵ *Ibid.*, p. 186.

⁶ *Ibid.*, p. 407.

paid, but it is extremely short-lived. The importance of "labor turnover" has only recently come to public notice in the case of adult labor;¹ in the case of the child it is even more significant. In Rochester, New York, the Board of Education found that the boys who leave school between 14 and 16 change their jobs every 17 weeks during their first year at work, or over three times a year.² In Richmond, Virginia, there is apparently a much greater permanence, but even there children occupied on the average 1.4 jobs during their first year at work.³ An investigation of one thousand tenement children in New York who entered industry at fourteen, disclosed that one-third of them averaged during this first working year six places apiece.⁴ Significant testimony comes from the employment records of Swift & Company of Chicago where the average term of employment for boys in their service was only 3½ months.⁵ This is at the rate of three boys a half a year per position or a labor turnover of 342%. In Hartford, Conn., 57 children occupied on the average two and a quarter jobs per year.⁶

So far as is known, Maryland is the only state which has anything approaching complete data on this question. By

¹ See Slichter, *The Turnover of Factory Labor*, also an article by the author, "The Problem of Labor Turnover, *Am. Econ. Rev.*, June, 1918, pp. 306-16.

² *56th Annual Report of the Board of Education*, Rochester, N. Y., 1913, p. 142. (A study of 696 boys.)

³ *Report of Survey Committee of Richmond*, p. 22, also *Bull. 162, Bureau of Labor Statistics*, p. 20. It is interesting to notice that white boys and negro boys change positions more frequently than white and negro girls, respectively; but that the whites both male and female, change much more frequently than the negroes.

⁴ Jane Addams, *The Spirit of Youth and City Streets*, pp. 115-6.

⁵ *Bulletin of the National Association of Corporation Schools*, April, 1916, p. 13.

⁶ *Vocational Guidance in Hartford, Conn.*, pp. 10-12. These were children who had benefited by the advice of a vocational counsellor.

a law of 1913, not only must the child receive a permit to enable him to go to work, but he must apply for a new permit for every new position entered. This affords a means of following the working history of children under 16, the result is a clear picture of the transitory nature of their work.¹

For the year 1913, 6,571 children took out their initial permit. Since those who took out permits at some time during the year were counted, this figure does not represent 6,571 "working years." It seems safe to estimate that the number of "working years" was approximately one-half this amount, or roughly 3300. This is probably correct on the assumption that most of the permits were granted in June and July and for the rest distributed evenly throughout the year. There were issued however during the year a total of 10,161 permits, or additional permits to the number of 3,590. This means that on the average the number of permits issued later during the first year of employment was something over 100 percent. 1511 of these permits, or 15%, were issued for the third or more time. The following table shows the length of time that 4,132 children reported that they had been employed on their last job.²

<i>Time</i>	<i>Number</i>	<i>Percentage</i>
Less than 2 months	2,132	51.3%
More than 2 months	2,000	48.7%
	<hr/>	
Total	4,132	100.0%

Of these who worked less than 2 months at their position, 633 or 15.2% of the total, were employed for less than two weeks.

In the two years 1913-14, 228 children held as many as 1,686 jobs.³ Twenty-one had ten or more jobs during

¹ *Report of Maryland Bureau of Statistics and Information*, 1914, p. 49.

² *Ibid.*, p. 51.

³ *Ibid.*, p. 93.

this time. Of these, two had been employed at 15 different positions, two at sixteen, two at seventeen, and one at eighteen.¹

Indianapolis, Indiana, also requires the granting of a new permit upon changing a job or leaving work. The following statistics for the period April 15, 1915 to July 31, 1916 show a high juvenile turnover.²

LENGTH OF TIME CHILDREN WERE EMPLOYED, PER JOB IN INDIANAPOLIS,
INDIANA: DURATION OF TERMINATED PERMITS

<i>Less than</i>	<i>Cumulative Number</i>	<i>Cumulative Per cent</i>
15 days	467	7.0
1 month.	1034	15.8
2 months	2043	30.3
3 months	3234	48.0
6 months	4746	70.7
9 months	5582	81.7
1 year.....	5982	87.7
Over one year.....	728	12.3
Total	6710	100.0

Thus 7% of these positions were held for less than 2 weeks, 15% for less than a month, 30% for less than 2 months, 48%, or practically one half, for less than three months.

In Evansville, Indiana, 212 children from 14-16 worked a total of 1269 months during the year May 1, 1915 and

¹ *Ibid.*, p. 97.

² Adapted from figures given in *Bulletin 21*, Indiana State Board of Education, "Indianapolis Vocational Survey," vol. i, p. 119. These figures are something of an overstatement. (1) They include only those permits which had been terminated and were not then in force which numbered 2690, (2) They include vacation permits as well as permits for work during school year. The former have, necessarily, only a brief duration. These, however, were not many. Despite these inadequacies the net result still shows a vast amount of shifting from position to position.

May 1, 1916, and held during this time 379 jobs. This is an average length of 3.4 months per job or over $3\frac{1}{2}$ jobs a year.¹ Dr. R. M. Woodbury's exhaustive study of the working history of 7000 Connecticut children from 14 to 16, showed that for the boys "a position was terminated, on the average, every 9.6 months of actual work while for the girls a position was terminated, on the average for every 13.3 months of work."² The labor turnover for boys (on the separations basis) would be approximately 125 percent, and for girls 90%. The boys therefore, show a distinctly greater tendency towards instability than the girls.

The children, if we may believe that Maryland Report to be typical, seem to leave chiefly upon their own initiative, and not because they are "fired." In 75 percent of the cases reported by the employers to the Maryland Board, the employers stated that the children left voluntarily.³

A detailed examination of the reasons given by the children as to why they left voluntarily is given below.⁴

¹ *Educational Bulletin 19*, Indiana State Board of Education. *Report of Evansville, Indiana Survey for Vocational Education*, pp. 417-430. An allowance must be made in these figures covering the number of jobs held, not terminated. Hence, some who were at their first job would not leave for sometime and therefore cannot be accurately classed as having "held one job."

² R. M. Woodbury, *Industrial Instability of Child Workers*, Publications Children's Bureau, No. 74, U. S. Department of Labor, p. 25.

³ Compiled from data given on page 55 of this report.

⁴ (Table compiled from p. 60 of the Maryland Report.) Thus less than 1% of the children left because they wanted to learn a trade and only 1.6% left to go back to school. Mrs. Helen T. Wooley's investigation of 700 working children in Cincinnati, disclosed that 40% left their jobs because of economic reasons, *i. e.*, low pay, unemployment, etc.; 20% because of dissatisfaction with the work itself; 11% due to physical inability to continue at the work; 11% to failure of child to get along with fellow-workmen or to incompetence; 9% to home difficulties; and 8% because of conflict with the child labor law. See Mrs. Wooley's "Charting Childhood in Cincinnati," p. 5. (Reprint from *Survey*, Aug. 9, 1913.)

(a)	<i>Dissatisfaction with the position</i>	<i>Number</i>	<i>Position</i>
1.	Did not like the position	667	24.9
2.	Excessive physical demands	633	23.3
3.	Insufficient wages	599	21.9
4.	Long Hours	132	4.8
5.	Required to do other work than specified ...	68	2.4
6.	Too far from home	127	4.7
7.	No opportunity to learn a trade at work	15	4
	Total	2278	83.5
(b)	1. Personal reasons	136	4.9
	2. Temporarily employed in the country	92	3.4
	3. Needed at home	45	1.6
	4. Returned to school	45	1.6
	5. Miscellaneous	180	6.6
	Total	453	16.5
	Grand total	2731	100.0

7. *Much time lost between jobs.* The children do not find new work immediately. There is an intermediate period of considerable length between the old and the new job. The following data from Maryland illustrates this point.¹

This table deserves careful analysis. While 58.6% of the children lost less than two weeks' time, 14.8% lost between 2 weeks and a month, and 26.7% over a month, while 7.2% spent over four months between positions in idleness. A rough average of the time lost between positions amounts to approximately one month per child.

The Chicago City Club found that over one-half of the 23,000 children between 14 and 16 who were not in school in Chicago in 1909, were unemployed.² If this was typical of conditions, it is fair to conclude that in Chicago, children

¹Compiled from data given on page 54 of the 1914 Report of Maryland Bureau of Statistics and Information.

²*A Report on Vocational Training in Chicago* by a Committee of the City Club, p. 34.

TIME IDLE BETWEEN POSITIONS

<i>Time lost</i>	<i>Number</i>	<i>Percentage</i>
Less than 1 week	976	25.3
1 week to 2 weeks	1289	33.3
2 weeks to 1 month	575	14.8
1-2 months	419	10.8
2-3 "	224	5.9
3-4 "	105	2.7
4-5 "	68	1.8
5-6 "	65	1.7
6-7 "	28	.7
7-8 "	29	.8
8-9 "	30	.8
9-10 "	21	.5
10-11 "	9	.2
11-12 "	12	.3
Over 12 months	16	.4
Total	3866	100.0

between 14 and 16 years work but half the time, and spend one of the two years in idleness. Dr. Woodbury's investigation of the 7000 Connecticut children showed that "10.2 percent of the total work histories of these children was spent in unemployment."¹

Many believe that such changing from job to job is good for a child, and that by trying various trades he acquires experience; that by learning what he cannot do, he finds what he can do, and that the hard school of experience teaches him resourcefulness. Such people approve Emerson's laudation of the lad "who teams it, farms it, peddles, keeps a school, preaches, edits a newspaper, goes to Congress, buys a township, and always, like a cat, falls on his feet." When they speak of the advantages of changing positions, they are really thinking, however, of tasks under the open sky or beside the work-bench; of positions which develop man-

¹ Woodbury, *op. cit.*, p. 34.

liness and resourcefulness, even if some of them are lacking in technical training. Such work but rarely exists to-day for urban or even for village boys.

8. *Summary.* Today the child works largely at jobs that are enervating rather than energising.¹ Emerson himself would not have put much faith in the quality of self-reliance caused by carrying parcels, tending a cotton loom, stitching button holes, canning oysters, rolling cigarettes, and opening doors. A change of jobs is rarely a change upward, merely a change to another unskilled and routine task.

This constant shifting causes a considerable economic loss to the employer. It takes time and money to "break in" a boy even to unskilled work. And where there are three or four sets a year it becomes practically burdensome. This in turn makes the employer refuse to admit children of this age to the skilled trades, and fastens them more securely to "blind-alley trades" as the only industrial opening for them. These changes, moreover, breed irresponsibility in the child himself. His thought is, "If I don't like it, I'll get another job." This prevents him from looking into the prospects of a position before he takes it, since he feels that he can always leave. He consequently tends to substitute hindsight for foresight in choosing a position. Similarly discontent, rather than sober choice, causes him to choose new jobs.

¹This distinction between juvenile position was first made by Dean Hermann Schneider. See his *Education for Industrial Workers*, pp. 5-17. The elements of energizing work are (a) out of doors or in well-ventilated work-rooms, (b) provides a well-rounded physical development, (c) requires continuous mental development, (d) mental alertness required for emergencies, (e) comprehensive grasp of the interdependence of occupations within an industry, (f) conditions of work never exactly the same, (g) work that breeds readiness for self-sacrifice. The elements of enervating work are (a) vitiated air, (b) standing in a strained position, (c) monotonous repetition of simple tasks, (d) hours of work so long that fatigue poisons accumulate.

The period of idleness between positions, which has been shown to be so large, is another evil factor in the child's industrial life. He is neither at work nor in school; he is industrially adrift. Unemployment for adults is bad enough; for children it is positively vicious. It breaks down habits of industry which are slowly forming, and exposes them to all sorts of positive dangers. Loafing about "waiting for something to turn-up" does not make strong men and women. For the city child, such idleness is especially dangerous.¹ The "gang spirit" seizes the unemployed boy, and he seeks satisfaction in his group, generally to anti-social ends.

Now it was the function of apprenticeship to protect this adolescent child. It gave him moral oversight and a steadiness of employment. It was a recognition by the state of guardianship over the child. Today with the breakdown of apprenticeship we allow the child to shift for himself. We allow him to drift into employments that are socially and individually harmful. We wash our hands of responsibility, and in consequence both the child and the nation suffer.

¹ Children in street trades in which the employment is irregular and intermittent are particularly injured by this. A study of juvenile delinquency of boys by the federal investigation into the conditions of woman and child-wage earners, shows the following occupational distribution:

<i>Trade</i>	<i>Per cent</i>
Newsboys	21.83
Errand boys	17.80
Drivers and helpers wagons	7.30
Messengers (telegraph, etc.)	2.39
Bootblacks	1.77
Peddlers	1.71
<hr/>	
Total	53.00%

These trades therefore furnish one-half the cases of juvenile delinquency, they certainly do not contain 50% of the boy workers. See *Report on Conditions of Women and Child Wage-earners*, Senate Doc. 645, 61st Congress, 2nd Session, vol. viii, p. 69.

CHAPTER V

WHAT EDUCATION IS NEEDED FOR MODERN INDUSTRY

As we have seen, the division of labor was the real destroyer of apprenticeship. Industry developed so many subdivisions that all-round training was both expensive and useless. This same obstacle confronts any scheme for industrial education today. Many loose-thinking advocates of vocational education have ignored this fact and have assumed that there is a limitless demand for skilled workers. Such is not the case. Modern industry does not require a large percentage of all-round skilled workmen. The vast majority of jobs can be learned in the space of a few days or at the most, in a few weeks.

The division of labor within an industry is not a consequence of machinery alone. Specialization existed in the days of handwork. One is apt to forget that Adam Smith illustrated the division of labor, with his famous example of pin-making, before the machine era had opened.¹ The report of the United States Bureau of Labor² on hand and machine labor shows very clearly that considerable specialization existed even in the days of the handicraft and the domestic systems. The eighteenth-century watchmaker did not make every part of the time-piece himself. Other helpers and fellowcraftsmen worked on particular parts which were later combined.

Machinery has, however, increased and extended the division of labor. The possibility of reviving apprenticeship or of devising an adequate substitute for it, depends

¹ Adam Smith, *Wealth of Nations* (Cannan Edition), vol. i, pp. 6-7.

² *13th Annual Report*, U. S. Bureau of Labor, 1899, 2 vols.

therefore upon a number of factors. First, how great a degree of specialization exists today in the various industries? Second, has this specialization, by limiting the number of diverse operations performed by one workman, increased the difficulty of the work required for a particular task? Phrased more briefly, has specialization increased or decreased the amount of skill required?¹ What kind of training is needed to fit men for modern industrial life?

It is exceedingly difficult to generalize on this point. Specialization varies not only from industry to industry, but also from plant to plant and from locality to locality. The larger the plant, of course, the greater is the division of labor. The Ford automobile works in Detroit is an example of a highly specialized plant, with such an extreme division of labor that little or no skill is required of its workers. Another plant in the same city, however, employs skilled workmen almost entirely who understand all branches of automobile manufacture. Country plants are generally smaller than urban; consequently they do not have as great a division of labor.² Where wages are low and labor cheap, there is little inducement for the introduction of machinery and increased specialization. Due to this fact, cigarette, and cigar-making is far less specialized in the south than in the north.

Any sweeping statement about industries would therefore be inadequate, and in many respects false. It is difficult if not impossible to establish a modal type for each industry. The general trend of specialization and skill is, however, shown by the following table.

For the purpose of convenience, we have classified the in-

¹ It is obvious that this question is different from that which is commonly put; "has the division of labor decreased the amount of skill exercised." We are here concerned with possibilities, not merely with what are the present conditions.

² *Report of the Industrial Commission, 1901, vol. vii, p. 265.*

dustries into three groups: (1) machine-building, (2) machine using, and (3) machine repairing.

I. MACHINE-BUILDING INDUSTRIES

<i>Industry</i>	<i>Number of different processes</i>
1. Plow manufacture ¹	52
2. Car building ²	13
3. Machinist	27
4. Automobile	250 (Ford)
5. Gas engine ³	50

In modern industry, machines produce other machines, Steel gives birth to steel.⁴ The system of interchangeable parts necessitates standardized construction and absolute accuracy, and this in itself prevents machinery from being hand-manufactured. Large-scale production, moreover, prevails in the industry, and this in turn leads to the utilization of the advantages afforded by machine construction.

In consequence there is a sharp differentiation in the skill required of the working force. A large number of highly-trained and competent engineers are needed in the drafting room. For the other workmen, however, muscle and endurance rather than skill and dexterity are required.⁵

¹ *13th Annual Report*, United States Bureau of Labor, 1899, vol. i, p. 96.

² *Bulletin No. 163*, Bureau of Labor Statistics, 1914, p. 6.

³ *Educational Bulletin 19*, of Indiana State Board of Education, "Evansville Vocational Survey," pp. 265-66. "Comparatively few all-round machinists are employed," *ibid.*, p. 264.

⁴ The evolution of American machine-making is well described in J. W. Roe's *English and American Tool Builders*, where a series of biographical sketches of important tool builders and their contributions is given.

It is especially significant that the system of scientific management with its differentiation of the task, has chiefly flourished in industries which build machines. In 15 of these industries scientific management had been introduced by 1915. See *Report of Committee American Society of Mechanical Engineers*, 1912; H. B. Drury, *Scientific Management*, 1915, p. 146. C. Bertrand Thompson, "Scientific Management in Practice," *Quarterly Journal of Economics* (Feb., 1915), vol. xxix, pp. 256-66.

II. MACHINE-USING INDUSTRIES

<i>Industry</i>	<i>Number of different processes</i>
A. Clothing and Textile Industries.	
1. Hosiery ¹	47
2. Underwear ²	37
3. White-goods ³	23
4. Dress and Waist ⁴	24
5. Gloves ⁵	22
6. Collars ⁶	28
7. Men's Tailoring ⁷ (coats)	39
8. Corsets ⁸	52
9. Cotton Goods ⁹	90
10. Boots and Shoes ¹⁰	98
B. Wood-Working Industries.	
1. Saw-mill ¹¹	34
2. Planing Mill.	
a. Doors ¹²	21
b. Sashes ¹³	22
3. Furniture. ¹⁴	
a. Bed-steads	52
b. Chairs	26
c. Lounges	34
d. Side Boards	22
e. Tables	20
C. Food.	
1. Meat Packing ¹⁵	42
2. Canning and Preserving ¹⁶	23
3. Crackers ¹⁷	17
D. Metallic and Mineral.	
1. Pins ¹⁸	12
2. Bolts ¹⁹	13
3. Iron-pipe ²⁰	22
4. Printing Trades ²¹	25
5. Cutlery ²²	25
6. Needles ²³	30
7. Pottery ²⁴	44
8. Hardware ²⁵	133
9. Blast Furnaces ²⁶	123
E. Miscellaneous.	
1. Cigarette ²⁷	12
2. Cigar ²⁸	17
3. Carriage Making ²⁹	120
4. Building Trades ³⁰	43-62
5. Watch Making	80
6. Shipbuilding (steel) ³¹	90

¹ 13th Annual Report Bureau of Labor, vol. i, p. 53.² Report on Condition of Women and Child Wage-Earners, vol. xviii, pp. 200-201.

Specialization in these trades is therefore minute. When

⁸ *Bulletin No. 159*, U. S. Bureau of Labor Statistics, pp. 88-91.

⁴ *Bulletin No. 145*, U. S. Bureau of Labor Statistics, p. 158.

⁵ *13th Annual Report Bureau of Labor*, 1899, vol. i, p. 50.

From investigation at Troy, N. Y.

⁷ Pope, *The Clothing Industry in New York*, pp. 70-71. The number of sub-divisions within this industry varies greatly from shop to shop and has since greatly increased. In one case a coat was worked upon by 62 different persons. See *Bulletin No. 135*, U. S. Bureau of Labor Statistics, p. 31.

⁸ *Report on Condition of Women and Child Wage-Earners*, vol. xviii, pp. 150-151.

⁹ *13th Annual Report*, Bureau of Labor, vol. i, pp. 220.

¹⁰ *Ibid.*, vol. ii, pp. 572-576.

¹¹ *Bull. No. 153*, "Wages and Hours in Lumber Manufacturing, Mill Work, and Furniture Manufacturing," Bureau of Labor Statistics, pp. 24-31.

¹² *13th Annual Report Bureau of Labor*, vol. ii, pp. 1364-65.

¹³ *Ibid.*, vol. ii, pp. 1385-86.

¹⁴ *Ibid.*, vol. i, pp. 49-50.

¹⁵ J. R. Commons, *Trade Unionism and Labor Problems*, p. 226.

¹⁶ *13th Annual Report*, U. S. Bureau of Labor, vol. ii, pp. 1064-65.

¹⁷ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, pp. 167-172.

¹⁸ *Ibid.*, vol. xviii, pp. 222-224. In the pin-making industry the effect of machinery has been to reduce the number of operation. The number of different workmen has been reduced and specialization consequently lessened. Most of the 12 operations cited are concerned with the marketing rather than with the manufacturing of pins.

¹⁹ *13th Annual Report*, Bureau of Labor, vol. ii, p. 1214.

²⁰ *Ibid.*, vol. ii, pp. 1229-1231.

²¹ *Bulletin No. 162*, U. S. Bureau of Labor Statistics, 1914, "Vocational Education Survey of Richmond, Va.," pp. 106-140.

²² *13th Annual Report*, U. S. Bureau of Labor, vol. ii, pp. 981-83.

²³ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, pp. 224-225.

²⁴ Bureau of Foreign and Domestic Commerce, *Report on the Pottery Industry* (Dept. of Commerce, Miscell. Series 21), p. 385.

it has been carried to great length, skill is not a requisite. Steel mills¹ and shoe factories, where the division of labor has been widely extended, employ few trained operatives. The silk, cotton, and worsted industries have also reduced the quality of labor needed to run their machines to simple automatic operations.² Collars are manufactured by automatic processes for which unskilled labor suffices; while the clothing trades are manned by employees who, with the exception of the cutters, are specialized and unskilled.³ Hosiery, underwear and corset factories are also characterized by a predominance of routine work requiring little or no technical

²⁵ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, p. 183.

²⁶ *Report on Conditions of Labor in Iron and Steel Industry*, Senate Doc. 110, 62nd Congress, 1st Session, vol. i, pp. 19-23.

²⁷ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, pp. 79-55.

²⁸ *Ibid.*, pp. 89-102.

²⁹ *Bulletin No. 19*, Indiana State Board of Education, "Evansville Vocational Survey," pp. 396-99.

³⁰ *Bulletin No. 124*, U. S. Bureau of Labor Statistics, "Conciliation and Arbitration in the Building Trades of Greater N. Y.," pp. 27-28.

³¹ *Shipyard Occupations*, published by Emergency Fleet Corporation, 1918.

¹ *Report on Conditions of Labor in the Iron and Steel Industry*, Senate Doc. 110, 62nd Congress, 1st Session, vol. i, p. xvii. "Great as is the proportion of unskilled labor in the iron and steel industry, the tendency of recent years has been constantly toward the reduction of the number of highly skilled men employed and the establishment of the general wage upon the basis of common, unskilled labor. Each year sees a larger use of mechanical appliances which unskilled labor is usually competent to control."

² For a keen and thorough analysis of the process of manufacture of these goods see F. W. Taussig, *Some Aspects of the Tariff Question*, see pp. 229-233, 272-276, 456.

³ For description of sub-divisions see, *Bulletin 135*, U. S. Bureau of Labor Statistics, pp. 31-36.

skill.¹ Wood-working plants have similarly witnessed the rapid extension of the machine process: whereas formerly furniture factories employed all-round cabinet makers, to-day such an artisan is the exception rather than the rule. In practically all operations, untrained workers are said to be as competent as trained.² The manufacture of food articles has also undergone specialization. Meat-packing is of course a notorious example, while the milling industry is conducted by automatic machinery, and all employees save the grinders and bolters are absolutely unskilled.³ The baking trades are tending to become more and more concentrated in larger plants with a consequent greater division of labor. Thus 92% of the employees in cracker factories are unskilled.⁴ Canning and preserving, is also a variety of work that demands little training.

Similar conditions of specialization prevail in the manufacture of hardware.⁵ Pin and needle manufacturing plants likewise require little skill from their employees. An exception to the general tendency must be noticed in the case of the pottery industry, for although this industry is sub-divided into 44 occupations, only 38% of its workers are said to be unskilled.⁶ The tobacco trades have become

¹ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, p. 197. An exception to this rule must be noted in the case of the so-called "Full-fashioned" knitting machines which demand highly skilled operations.

² *Bulletin No. 129*, U. S. Bureau of Statistics, "Wages and Hours in the Lumber, Mill-work, and Furniture Industries, 1890-1912, p. 135.

³ National Society Promotion Industrial Education, *Bulletin 21, Report of the Minneapolis Survey for Vocational Education*, pp. 321-23.

⁴ *Report on Conditions of Women and Child Wage-Earners*, vol. xviii, p. 165.

⁵ *Ibid.*, p. 182.

⁶ Bureau of Foreign and Domestic Commerce, *Report on the Pottery Industry* (Dept. of Commerce, Miscellaneous Series, no. 21, p. 242).

more routinized with every passing year. Skill has largely ceased to be necessary, and a monotonous repetition of simple movements characterizes nearly every stage.¹ The building trades have lost much of their former skill because of the invasion of their field by mill work. Sashes, blinds, doors, mantles, stair material and the like are now made, not by hand but by machinery in factories. In consequence a carpenter does not need to be as adept as formerly. Moreover in large construction the tendency is to sub-divide the task and confine the work of the skilled men to specific operations, while utilizing lower-grade labor for the remaining.²

The wartime experience of the Emergency Fleet Corporation in training workmen for the shipyard trades furnishes interesting proof of how little time is required to master the main principles of a modern trade. Training courses were established in seventy-one yards under the direction of the Fleet Corporation. The men who were thus taught trades were drawn principally from unskilled work and from manufacturing. When the learners left their training course they were able in the main to hold their own with experienced journeymen, while in certain cases they even excelled the journeymen in the latter part of their training period. Yet the average training period for all men in the seventy-one yards for which statistics were available, was only nineteen days! A detailed summary by trades is given below:

¹ *Bulletin No. 162*, U. S. Bureau of Labor Statistics, Vocational Education Survey of Richmond, Va., pp. 278-279. Also *Bulletin No. 19*, of Indiana State Board of Education, "Evansville Vocational Survey," pp. 205-211.

² F. B. Gilbreth's accomplishments in bricklaying where he attained a large output by training low-skilled men to perform most of the preliminary motions by which skilled bricklayers were enabled to devote themselves exclusively to the laying itself, is but a logical conclusion to a tendency that has been steadily developing.

LENGTH OF TRAINING PERIOD FOR TWENTY TRADES IN TWENTY-ONE
YARDS, COVERING 9,700 MEN¹

Trade	Average Days for Each Trade	Trade	Average Days for Each Trade
Riveters.....	28	Machinists.....	39
Holders-on.....	14	Pipe fitters.....	39
Heaters.....	10	Regulators.....	12
Ship fitters.....	51	Gas welders.....	30
Chippers.....	28	Electric welders.....	28
Drillers.....	13	Burners.....	23
Reamers.....	12	Punchmen.....	21
Bolters.....	10	Ship carpenters.....	48
Linermen.....	8	Hand caulkers.....	34
Erectors.....	20	Tank testers.....	33

3. Machine Repairing

It is here that skill is required. To repair one part of a machine requires a knowledge of the whole mechanism. Modern industry has made repair work a trade in itself. The man who runs the machine does not know how to put it into working order. This is left to a separate force. These men must be thoroughly competent, for a variety of problems face them every day. They must have more all-round skill than the old craftsman ever dreamed of.

In both cotton and woolen mills, the loom fixer is the most skilled worker in the plant.² In saw mills it is the filer or repair man who is the most important employee.³ The United Shoe Machinery Company repairs the machines

¹ Table taken from P. H. Douglas and F. E. Wolfe, "Labor Administration in the Shipbuilding Industry During the War," "II" *Journal Political Economy*, May, 1919, p. 379 (vol. xxvii.)

² The loom-fixer on the average has supervision over 85 automatic looms. *Bulletin U. S. Bureau of Labor Statistics No. 143*, pp. 19-24.

³ *Ibid.*, *Bulletin No. 153*, "Wages and Hours of Labor in the Lumber, Mill-Work, and Furniture Industries," p. 30.

which it has leased to shoe factories, and maintains a staff of highly skilled mechanics for this service. This has the dual effect of tightening the monopoly of the company and lessening the amount of skill required in the factory force. The telephone industry requires a large corps of skilled electricians who can make rapid yet accurate repairs. Railroad repair shops must have experts able to detect the trouble with damaged engines and possessed with the skill to repair them.¹

The predominance of skill in the repair end of industry is shown by the fact that in the corporation schools over four-fifths of the students are in the machinists trade and are being trained to understand repair work. The following figures were collected in 1914 and cover the returns from over 50 plants.²

	<i>Number of Students</i>	<i>Percentage</i>
Machinists Trade	4202	80.8
All others.....	997	19.2
Total	5199	100.0

These figures are especially significant since they are from corporation schools. Modern business concerns will train

¹ The repair of passenger and freight cars does not require as much skill but there is specialization even in repairing cars; a government investigation showed that this branch of work had 13 sub-divisions. See *Bulletin. No. 163*, U. S. Bureau of Labor Statistics, "Wages and Hours of Labor in the Building and Repairing of Steam Railroad Cars," p. 6.

² This table was compiled from raw material contained in a report by the sub-committee on manufacturing and transportation, and published in the *Proceedings of the Second Annual Con. of the Nat. Assn. Corporation Schools*, pp. 408-415.

In this explanation, the transition of occupations from the home to the factory is made the dynamic, while the movement of women is the passive factor. This statement must be modified in at least two respects: (1) whereas formerly women worked at all these tasks, nowadays the factory woman works at only a part of one. The division of labor has narrowed women's work as well as men's. (2) It is furthermore as true of men as of women, since all industry has proceeded from the home. The male artisan, whether under the domestic or handicraft system, was a home-worker. The factory and the home were, in fact, undifferentiated. It would be equally correct therefore, to say that men have followed their occupation from the house to the mill.

What has caused so much emphasis to be placed on this tendency in the case of women has been the fact that on the whole they have been slower than men to go through the process. Cooking, the making of clothing, and laundry work have but recently been organized upon the factory basis. Their disappearance in a large measure from the household has necessarily lightened the toil of the house wife. The evolution of these industries has released the energy of millions of women for other tasks. Naturally they have entered in general the occupations for which they fancy their customary training has equipped them.

The recent movement of women into industry is shown by the fact that while in 1880 only 14.7% of the females over 10 years of age were gainfully employed, this percentage had risen to 17.4 by 1890, to 18.8 in 1900 and by 1910 it had reached 23.4.¹

Some of the effects of this entrance of women into industrial life should be noted. Perhaps first in importance

¹ *13th Census*, vol. iv, "Occupations," p. 26.

is the fact that the industrial life of the average female worker is relatively brief. Thus, 30.8% of all women employed in 1910 were under 20 years, as contrasted with 16.5% of the men. Only 16% of the women gainfully employed were over 45, while 26.1% of the men were above this age.¹ Professor Persons computed that in 1900, 49.14% or practically one-half of all women workers were under 25 and 71.4% or over seven tenths were under 35.²

The early age at which women leave industry is indicated by the fact that, whereas approximately 40% of all girls between 16 and 20 were employed in 1900, that only 26% of those between 21-44 were so employed; while 96% of men between 21-44 were employed as against only 80% from 16 to 20 years. Had this 21-44 group been separated into five-year age groups, it would have undoubtedly shown a great falling off in the percentage of women at work above thirty.

The cause for the sudden drop in the percentage of women who are at work is of course marriage. In the 21-44 year period nearly all who are ever to be married, become so. This makes them leave industry for the home. They have definitely forsaken the factory or the store and few will return. Thus what is for men a life-long career, is for women but a temporary occupation. Five or at the most ten years is the average length of time a woman spends in industry.

This transient nature of woman's work has a dual effect: (a) It prevents them from doing skilled work in the industry in which they are engaged, and (b) it tends to unfit them for housekeeping which most of them must later enter.

¹ 13th Census, vol. iv, p. 69.

² C. E. Persons, "Women's Work and Wages," *Quarterly Journal of Economics*, vol. xxix, p. 215.

It takes time to acquire skill in modern industry. While learning, wages are necessarily lower than they would be if the worker did not need to be instructed. Learning is therefore an investment, which depends for its profitability upon long service. It is hard enough for a boy with a whole lifetime in industry before him to realize that it might be a good thing to learn a skilled trade. For a girl who sees marriage before her as a probability, it is almost an impossibility. She believes that she will no sooner master the trade that she is studying than she will marry and turn from the mill or shop to the household. Of what avail then will be her ability as a skilled buyer or cutter? Her inevitable thought is, "Isn't it better to work at a job with a higher starting wage, even though it affords no opportunity for trade education?"

Such considerations discourage all girls, not merely those who ultimately marry. The prospect of marriage looms before them all, and each sub-consciously feels that she is destined for the home, not for the factory. Thus women enter industry regarding it as a place where they can kill time and assist their families until Thomas, Richard, or Henry "turns up." Naturally therefore, they flock into the unskilled positions in every industry they enter. They are essentially youthful, unskilled, low-paid and transient workers.

Once at work, they have little incentive to become interested in their trade. The positions at which they are employed are, as we shall see, in the main uninteresting and mechanical. This tends to extinguish any instinct of workmanship that might be dormant within them. Marriage is still the probable career and prevents them from taking their work seriously. By the age of 25 most of the girls have married and have left industry; by 30 practically all have done so, and a fresh batch of girls has taken the place of those who have departed.

There are left, however, those women who have not found a husband; who, like their sisters, neglected to prepare at the outset for a prolonged industrial career. They find themselves at 30 somewhat fatigued by the pace which modern industry has set, and since it is now too late to start in training for the higher positions, they continue to work along at the unskilled jobs and remain, on the whole, at the foot of the industrial ladder.

This modern situation, however, not only prevents the woman worker from acquiring industrial skill, but it also operates to lessen her training in home-making. The period of woman's life which she now devotes to industry was formerly devoted to learning how to manage a home. Through the instructions of her mother she learned how to become a fairly competent housewife. Much of the training was of course given by the rule-of-thumb method, but the period from 16-25 was distinctly one of preparation for her future work of housekeeping. Nowadays, the woman in industry has little opportunity to get this education. Her days are spent elsewhere, and her work leaves her so tired that she does not want to study at night but quite naturally she instead craves amusement.

Moreover, she is necessarily more concerned with getting married, than with fitting herself for marriage, since the qualities that men desire in girls before marriage are not generally those that they would desire after marriage. Should a girl study carefully how to become a competent mother and wife, it is probable that this would act as a passive deterrent to her ever having the opportunity of becoming one.

Woman is then both an unskilled worker in industry and an unskilled worker at home. It is not her fault. She has the desire for craftsmanship and for good home-making, but society affords her little opportunity to satisfy these desires.

While industrial life has given woman greater independence, it has also given her uninspiring tasks and has deprived her of her former opportunity of learning about home-making.

Vocational education for women must then train women both for industry and for the home. If it does the former without the latter, it is preparing the average woman for at most only 10 years of her future life; if it does the latter alone, it is shirking the needs of those who will continue in industry, and is allowing the temporary workers to stay at ill-paid and unskilled jobs.

II. Gainfully employed women; their work and vocational needs.

The following pages contain an analysis of the nature of the work performed by women in industry and of the possibility of improving their situation through training. In 1910 the women employed were divided among the various occupational groups in the following proportions: Agriculture, 22.4%; professional service, 8.3%; domestic and personal service, 32.5%; manufacturing, 21.9%; and trade and transportation, 14.9%. While the number of women in all groups had increased absolutely since 1880, the relative importance of the various groups had considerably altered. Thus domestic service had decreased during these thirty years from comprising 44.6% of all gainfully employed women to 32.5%, while trade and transportation had increased from 6.2% to 14.9% and professional service from 6.7% to 8.3%. Agriculture remained approximately the same, although the 1910 statistics are probably not completely comparable with those of the preceding years, while manufacturing, although almost trebling absolutely, declined relatively from 23.8% to 21.9%.

These different fields of woman's work will now be analyzed in respect to their relative importance, the kind of

work performed, and the possibilities for training. It is much to be regretted that we do not have later statistics than those of the 1910 census for the number of women employed in various occupations.

A. Agriculture:	Number of Women Employed ¹	Percentage of Female to total workers employed
	1,807,050	14.4%

Nearly 60% of the women employed in agriculture are colored, while 87% of the total are employed in the southern states.² Those that are not colored are chiefly of the "poor white" class and work on the small tenant farms. There is, however, a small percentage of native-born women of the best type helping with farm work. Some knowledge of scientific agriculture is needed by a considerable proportion, although the vast majority are, of course, farm laborers rather than managers.

B. Professional Service:	Number of Women Employed ⁴	Percentage of total number of women employed
	779,825	9.6%

Eighty percent of this group are trained nurses, music-teachers, and, most important of all, school teachers. Taken as a whole they are the most favorably situated of all women workers. Problems there are to be sure, but the question of education is not primary.

¹ This is probably somewhat in excess of the actual number, see *13th Census*, vol. iv, pp. 27-28.

² Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia.

³ For description of working conditions, see A. M. MacLean, *Wage-Earning Women*, pp. 99-129.

⁴ This number is somewhat larger than that listed in the table previously given. This is because it includes several occupations not included in the census up to 1900. When the previous table was given only these occupations were included under Professional Service for 1910 which had previously been included.

<i>C. Domestic and Per- sonal Service:</i>	<i>No. of Women</i>	<i>% of total No. of Women Employed</i>	<i>% of total No. in Group (Both Males and Females)</i>
	2,463,413	30.5%	67.7%

Though, the relative importance of domestic service has steadily decreased, it is still pre-eminently woman's main industry. Formerly "working out" meant acting as a servant and it was the common employment of our native girls. Today over 56% of domestic "help" are either foreign-born or are negroes. These classes have crowded out the native girls, who have gone into other and more desirable kinds of work. In theory, domestic service is a reconciliation of the conflicting demands of the home and of industry. In working for wages, girls are at the same time learning how to manage a household. Present work and future occupation are thus joined together. Under good conditions, the efficient servant will ultimately be the efficient housewife. It must be frankly admitted, however, that little training is given today to the servant of the average household. The average housewife of today (unlike her grandmother) is seldom capable of efficiently instructing a maid in cooking or in housekeeping. As a result the maid-servant is compelled largely to blunder through things by herself.

Since education within the home has largely failed, some public system of household training seems then to be necessary. Some form of continuation school, such as will be described later, whereby all the house-servants in a locality could be given training in the principles of housekeeping, would be valuable. General instruction in personal hygiene, food values, and plain sewing, would fill gaps that now exist.

In discussing domestic service, mention should be made of the substitutes for the home. The growing importance of hotels, restaurants, and boarding houses, and not the inven-

tion of fireless cookers, vacuum cleaners, and the like, constitutes the real domestic industrial revolution.

The following figures show something of the growth in these occupations since 1880.¹

<i>Occupation</i>	<i>1880</i>	<i>1890</i>	<i>1900</i>	<i>1910</i>
Boarding-house keepers	19,058	44,349	71,281	165,482
Hotel keepers	32,453	34,076	54,797	64,504
Restaurant keepers	13,074	19,283	33,844	60,832
Total	65,085	107,708	159,922	290,788

Thus we see that these occupations increased nearly four-fold while the population increased but 85 per cent. It will be noted that the above table did not include the employees of these establishments. Had they been segregated by the census a still greater increase would have been shown. The development of these occupations is a unique development in large-scale production. Their increase is due not only to increased travel on the part of Americans, but also because the difficulties attendant upon housekeeping have forced many middle- and upper-class families to abandon their homes and live in hotels and apartments.²

The large scale of these enterprises naturally causes a sub-division of labor that the one- or two-servant household cannot have. This is especially true, of course, of hotels. Chamber-maids, waitresses, and cooks pursue their particular occupation and seldom follow any other. As a result

¹ *12th Census, Special Report on Occupations*, pp. 36-37; *13th Census*, vol. iv, p. 94.

² See an article by I. M. Rubinow, "The Problem of Domestic Service," *Journal of Political Economy*, vol. xiv, pp. 502-519.

they do not have the all-round training for housekeeping that the maid-of-all-work has.

There are approximately 40,000 chamber-maids and 85,000 waitresses, outside of those in hotels, boarding-houses and restaurants. Both of these classes need instruction. Cleanliness, promptness, speed, a retentive memory and accuracy are all necessities. Training to develop these qualities could be systematized, and the efficiency of these workers heightened.¹

Another domestic industry that is developing into the factory stage is laundry work. In 1910 this employed over 663,000, of whom over one-sixth were employed in laundries and were not home workers. Though men formed but 2.5% of the home operatives, they comprised 32.1% of the laundry-hands. In this instance men are really assuming what was exclusively woman's employment.

Home laundry work is heavy and requires care more than skill. It is the last resort of broken-down women. In the factory the amount of machinery varies with the size of the laundry. Physical strength and endurance rather than skill or dexterity is required. It is this severe physical strain that has led to the introduction of men into the trade. Women work almost exclusively as markers, shakers, flat-work ironers and folders, starchers, dampeners, body-linen ironers, finishers, inspectors, assorters and

¹ In three large N. Y. City hotels, classes are held for chambermaids in which English alone is taught since the girls are all foreigners. Cf. *Pamphlet No. 263 of National Labor Commission*, "Experiments in Industrial Education in N. Y. City," pp. 12-13. The working conditions of chambermaids and waitresses are such, however, that great reforms are needed before they become fit opportunities for women's work. For the hardships of a waitress, see *The Survey*, vol. xxxvii, p. 174 (Nov. 18, 1916). A long working day, high strain at certain intervals, heavy trays, scanty opportunity to sit down, hastily-snatched food, together with the blind-alley nature of the job combine to render it objectionable.

² *13th Census*, vol. iv, p. 94.

wrappers. All these jobs are routine and mechanical in nature¹ and require little skill.

D. Manufacturing and Mechanical:

<i>No. of Women Employed</i>	<i>% of Total Women Employed</i>	<i>% Women of total in group</i>
1,820,980	22.4	17.2

For convenience and coherence this class will be subdivided into various groups.

*I. Clothing Industries.*²

<i>Total No. employed</i>	<i>No. of women</i>	<i>% Women of Total</i>
1,551,765	949,362	61.2

Thus over one-half of the women in manufacturing are engaged in the clothing industries.

<i>(a) Dressmakers and Seamstresses.</i>	<i>Total No. of women employed</i>
	449,908

This, with rare exceptions, is completely a woman trade. It differs from the factory manufacture of women's clothing in that it chiefly covers the costume-field, while the factory

¹For description of laundry processes see vol. xii of the *Report on the Condition of Women and Child Wage-Earners*, pp. 18-25; a fuller treatment is found in *Bull. 122, U. S. Bureau of Labor Statistics*, "Employment of Women in Power Laundries in Milwaukee," pp. 38-73. Here the injurious nature of some of the work, especially that of the foot tread press, is clearly brought out. See also Elizabeth B. Butler, *Women and the Trades*, pp. 178-203, where the laundry work in Pittsburg is described and analyzed.

²This classification of "clothing industries" is much broader than the one given in the census. It includes milliners, dressmakers, seamstresses, cloak, suit, skirt, and over-all operatives; shirt, collar and cuff employees, workers in shoe factories, and shoe-makers not in factories. It includes practically all the industries that are producing necessary and customary articles of clothing. As such, it gives a truer picture than the rigid Census definition of clothing industries, which excluded shoe-making, milliners, and dress-makers.

covers the ready-made field. Many of these dress-making shops are still in the handicraft stage in which apprenticeship flourished. They buy their own materials and make up the goods, and sell directly to the consumer. Dress-making is essentially one of the last stands of the independent handicraft.

Dressmakers may be classified into three groups: (1) Those who work out by the day, (2) those employed in small establishments, (3) those employed in large shops.

(1) Practically all seamstresses and many dress-makers are not handicraftsmen but day laborers, who "sew out" and move from home to home. In the latter case the goods are generally furnished by the consumer and the seamstress simply makes them up at a specified rate.¹ These seamstresses are working at tasks that are vitally necessary for the average wife. Consequently professional training in this task is also a particular preparation for home-making. Its relation to the home is not as close as that of domestic service, but it is nevertheless an indispensable branch of housekeeping.

The independent seamstress who works by the day knows the general kinds of sewing, and a few are highly skilled in elaborate dress-making.

(2) By a small shop is meant one which employs ten or less. The young worker in these shops needs fairly general skill and is supervised quite carefully by the head of the shop.

(3) The work in the larger shops is much more subdivided. The large shop is more like a factory, with its separation of employer and worker, its large capital and the sub-division of the work. The larger the shop, the

¹In this it differs from the domestic or the "putting-out" system in which a middleman furnishes raw material and sells the finished product. Here there is direct relationship between consumer and producer.

more specialized the tasks, and the less all-round the skill required. In Cleveland 21 different sub-divisions were found, at which separate workers were engaged.¹ A Massachusetts shop with 100 employees had equal specialization.²

In these shops the tendency is for each employee to do only one special task. There are exceptions of course when in order to fill a rush order, a worker may be transferred to another branch. Men seem to fill the most skilled positions such as cutting. Current investigation seems to indicate that the small shops, though still predominating, are being gradually driven out by the larger, and that in consequence specialization is on the increase.³

Taken in the large, the requirements of the dress-making trade are those of good, general training and intelligence plus an ability to sew neatly either by hand or by machine. There is moreover opportunity for designers who require some artistic training, an appreciation of color harmony, and a knowledge of fabrics, and textiles.⁴

(b) *Milliners*

No. of women employed

128,438⁵

This trade likewise is monopolized by women. Like

¹ *Cleveland Foundation Education Survey*, Edna Bryner, "Dress-making and Millinery," p. 31.

² United States Bureau of Labor Statistics, *Bull. No. 193*, May Allinson, "Dressmaking as a Trade for Women in Massachusetts," pp. 44-45.

³ See Allinson, *op. cit.*, p. 52, "The small and medium sized shops are disappearing before the competition of the domestic or dayworkers on the one side and the large shop on the other." See also Edna Bryner, *op. cit.*, p. 30.

⁴ For the qualities that the dress-making trade requires of its workers, see the *Vocational Survey of Minneapolis*, pp. 411-424.

⁵ It is quite possible that the number of dress-makers and milliners listed in the census may be above the actual number. It is quite well-known among statisticians that professional prostitutes generally list their occupation as either that of dress-making or millinery.

dress-making, it is still chiefly in the handicraft stage of production, where the independent owner makes up the goods with the aid of assistants, and sells them directly to the consumer. The tendency towards the factory stage is, however, visible in the presence of the factory-made hat which has become more important in recent years.

Retail stores may either make their own hats or merely sell the ready-made factory hats. In the latter case the employees are primarily saleswomen not craftswomen. A few milliners may be needed to make necessary alterations, but beyond this nothing. All-round workmanship is needed in a small shop which makes its own hats, because the work is little specialized. The milliner cannot standardize her hats, because she must keep a large variety of different hats in stock. As a result individual craftsmanship counts for much. A fine feeling for color, a capacity for dexterous combinations of materials, and a nice artistic sense are all needed.¹

Millinery departments in stores have a much greater sub-division of labor than does the ordinary retail shop. Wholesale houses have a still greater sub-division. The larger the plant, the greater the sub-division and the less skill required of the employees.

Miss Perry, in her study found that workers performing mechanical tasks outnumbered the trimmers who do artistic work by the rate of 6 to 1 in Boston, and 7 to 1 in Philadelphia.² Three-quarters of the employees in Cleveland were mere copyists and only 7% were designers.³

Millinery is a seasonal trade. Like all seasonal trades, it has its periods of feverish over-activity and its correspond-

¹ The reverse side of the shield is the unsanitary, and poorly lighted nature of many of the workshops.

² Lorinda F. Perry, *Millinery as a Trade for Women*, p. 26.

³ Bryner, *op. cit.*, pp. 60-61.

ing seasons of lethargy. Wages are low and prospects of advancement slight. Because of this and other reasons, only a limited number of girls should be encouraged to enter this trade.

(c) *Men's Hats*

<i>Total No. employed</i>	<i>Total No. Women Employed</i>	<i>% Women</i>
40,794	11,514	28.29

Unfortunately the number of workers in the straw hat industry cannot be ascertained.¹ Straw hat making is highly seasonal and the work in the late spring is feverish in its intensity. Not much skill is required. High power machines are used and the employee should know how to manage them. The Manhattan Trade School has tried to train the girls already engaged in the industry to be better workers, but the possibility of rising to more skilled positions is almost nil. The effectiveness of the workers at their present tasks might be heightened by trade education, but the maximum of efficiency would soon be reached. It is distinctly an industry which does not require skill, but merely endurance and nervous energy of its workers, and it is one which exhausts the energies of those who engage in it.

The woolen and felt hat industry for which statistics are given, is by no means as seasonal. More skill is required than in straw-hat making, but the skilled positions are rarely filled by women. They are employed in the lower grade jobs.

(d) *Collars, Cuffs and Shirts*

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i>
70,123	50,767	72.4

¹ Under the head of milliners the *Census* does not distinguish between the straw industry and that of straw hats. Many straw-hat workers moreover were undoubtedly included.

Women's work in these industries is decidedly low-skilled. In the manufacture of shirts all the skilled positions, such as that of cutter, are filled by men.¹ Women in consequence are found in the routine machine operations. Few or none of these require any special skill.²

The collar and cuff industry, which has its center in Troy, N. Y. employs women predominantly. The processes are almost completely automatic, work is highly subdivided, with little or no necessity for technical skill. An investigation was made a few years ago of this trade in which it was found that no trade education was needed by the women engaged, since their work required little skill or dexterity. Endurance and a good physique were the chief requirements.

(e) *Clothing Factories*

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
529,470	210,879	39.8%

This in turn has many sub-divisions.

(1) *Men's Clothing.*

In 1910, there were over 257,000 workers in this industry, 55% of whom were women over 16 years of age.³ Since then, of course, the industry has grown very rapidly. It is characterized by a great division of labor and the grouping of the women in the lower grade of positions.

In the manufacture of coats the sub-division of labor varies in direct ratio to the size of the shop. In one coat

¹ Vol. xviii of the *Report on the Condition of Women and Child Wage-Earners*, p. 288.

² *Ibid.*, pp. 288-289. The work women do is monotonous to the extreme and is performed under conditions that are exceedingly fatiguing. Little or no skill is required.

³ *13th Census*, vol. viii, p. 254.

shop¹ in New York, 49 different occupations were found which were performed by different operators, while in some shops as high as 62 different jobs were found. The most skilled occupations are those of cutting, fitting and basting, and these are almost completely manned by men.² Women work at the lower-grade tasks,³ and an analysis of the tasks they perform shows that speed is the requisite rather than skill.

The manufacture of pants is less skilled than that of coats, and consequently women are found in it to a greater extent.⁴ In those tasks in which skill is still required, however, men are predominant.

Vest-making is lighter work. Most vests are probably made by one worker with a few assistants. Some shops however, have carried the division of labor to an extreme point. Where sub-division of work does prevail, men again dominate cutting and other skilled trades while women are engaged at the more simple tasks.

Taking the industry in the large it is safe to conclude that women occupy the lower ranks of operations and work at jobs that require little skill or training.⁵ Girls might be

¹ Vol. ii of *Report on Conditions of Women and Child Wage-Earners*, p. 462.

² *Ibid.*, pp. 443, 447.

³ *Ibid.*, pp. 445-462. Whenever in the description of the 49 processes, it is mentioned that no skill is required, one is almost sure to find that the occupation employs women almost exclusively, i. e., padding collars, lapel padding, felling tape, and pulling bastings are instances of this.

⁴ *Ibid.*, p. 464.

⁵ For a description of women's position in the clothing trade, see Mabel H. Willet, *The Employment of Women in the Clothing Trade*, 1902, esp. pp. 67-72. This study is somewhat obsolete but the point that women do the unskilled work, and men the more skilled is still valid. The investigation into the condition of women and child wage earners disclosed the fact that most women workers stopped at finishing, button sewing, and button hole making. See vol. ii, of the *Report*, pp. 476-78.

trained for some of the more highly skilled occupations such as pocket making and the sewing in of sleeves in which there are few women, at present.

(2) Women's Clothing.

This branch of the clothing industry employed over 162,000 people in 1910, of whom over 63 per cent were women above 16 years.¹ The proportion of women is thus higher than in the men's clothing industry.

In the dress and waist industry, women comprise 84 per cent of the working force.² This trade has many sub-divisions, there being as many as 24 different occupations.³ Women abound in the simple non-operating tasks such as cleaning, finishing and assorting, and in the operative branches which do not demand much skill. The most highly skilled occupation, cutting, is exclusively monopolized by men, and one-third of all the men in the industry are found in this operation.⁴

It should not be inferred that all of woman's work in this industry is completely unskilled. Designing and draping are distinctly high-grade positions. Moreover over 25% of the women in New York shops make the entire garment and so need an all-round sewing knowledge that is not required in the larger shops where the division of labor has been carried to the extreme. On the whole, however, the knowledge that is needed by the female workers is not specialized craftsmanship, but general knowledge.

The cloak and suit industry more nearly approaches the men's garment trades than it does the dress and waist industry. Here the tailoring of heavy textiles predominates.

¹ *13th Census*, vol. viii, p. 254.

² *Bulletin No. 145, U. S. Bureau of Labor Statistics*, p. 158.

³ *Ibid.*, p. 157.

⁴ *Ibid.*, p. 169.

The heavier work causes men to be more numerous : thus they fill the pressing department. Once more women are found to be in the lower-grade jobs and men in the upper.

(3) Shoe-making (factory).

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i> ¹
68,549	217,667	31.5

Here the effects of the division of labor are most clearly apparent. Shoe factories are the heightened reflection of the tendencies operating in all industries. The making of a shoe is so sub-divided that there are over two hundred different operations, each cared for by different workmen. Women predominate in the routine sewing operations, and in the packing, folding, and cementing departments. These require little training. Deftness rather than skill is needed.² Men on the other hand are found in the more skilled levels of work. Over 95% of the cutters are men, as are likewise the lasters, while the finishers are chiefly men as well.

The shoe-makers or cobblers who are outside the factory are small handicraftsmen. There are few women in this class and for our purposes they may be neglected.³

2. Textile Industries.

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i> ⁴
898,992	410,174	45.6

¹ *13th Census*, vol. iv, pp. 350-353.

² The unskilled nature of women's jobs may be seen from a study of 214 women in Massachusetts factories; 86 or 48.2% required less than a week to learn their position, 86 or 48.2% required from 1 week to 4 weeks, while only 42 or 19.6% required over a month, see *Bull. No. 180, U. S. Bureau of Labor Statistics*, "The Boot and Shoe Industry in Mass. as a Vocation for Women," p. 50.

³ The statement made in Chapter V that repair work was the chief branch of modern industry, which demanded skill is here corroborated. The modern cobbler does chiefly repair work. Since he must know how to construct the whole shoe, he is much more skilled than the factory-hand.

⁴ *13th Census*, vol. iv, pp. 380-393.

There are four main textile industries, (a) cotton, (b) woolen (c) knitting, and (d) silk manufactures. Other divisions such as lace, embroidery, and rope and sail manufactures will be omitted because of their comparative unimportance.

(a) 148,000 women were employed in 1910 in the cotton industry where they formed 40% of the total force. 60% of the men were employed at occupations in which no women at all are employed.¹ The women are employed at the simpler and less skilled operations. Thus ring spinning is work that requires neither special mechanical knowledge or great physical strength,² and is performed almost wholly by women and by children. The spooling of the yarn and the "drawing-in" (a threading process) are also managed by women.

Men, on the other hand, monopolize mule-spinning because it is more difficult than ring-spinning. They do all the mixing, carding, and slashing, while all the loom-fixers are likewise men.³

(b) 55,000, or 42%, of the 138,000 employees in woolen mills were women.⁴ Here again they occupy the lower grade jobs. They comprise practically all of the furlers, rovers, drawers-in, sewers and menders, spoolers, and twist-ers. Loom fixers are again entirely men, while men predominate as carders, combers, slashers, sorters, and scourers. The same demarcation that is characteristic of the cotton industry is applicable here. Wherever there are skilled positions they are filled by men, while women are found wherever work is completely unskilled and routine.

¹ *Report on Conditions of Women and Child Wage-Earners*, vol. i, "Cotton and Textile Industries," p. 47.

² *Ibid.*, p. 403.

³ For description of processes, see *ibid.*, pp. 399-408.

⁴ *13th Census*, vol. vi, pp. 390-392.

(c) Fifty-five percent of the silk operatives in this country were women in 1910.¹ This industry has developed very rapidly, due to a cheap labor supply and the protective tariff. Hand looms have been displaced by machine looms more completely than abroad. Silk manufacturers have located their plants where a cheap labor supply abounded. Thus Paterson, N. J., where immigrants could be secured, was chosen as the first center of the industry. Later the seat of the industry was moved to the coal-mining centers of Pennsylvania, where the wives and children of the miners could be secured for low wages because of the necessity of eking out the low yearly earnings of the heads of the households.

(d) In the knitting mills as well, there is little competition between the sexes. While women are engaged at the light and unskilled posts, men do the heavy work and in so far as skill is required, fill those positions as well. The full-fashioned knitting machines are the most complex of all the machines, and several years training is required to know how to operate them. These machines are "invariably operated by men."²

3. Food Trades.

<i>Total Number in Trade</i>	<i>No. of Women</i>	<i>% Women of Total</i>
413,559	63,214	15.2 ³

Though this is woman's proverbial occupation, she forms but 15% of the number of employees. This is a considerably smaller percentage than that which the total number of working women form of the total working population. In woman's traditional employment, therefore, as the industry has moved away from the home, men have gone into it.

¹ *13th Census*, vol. vi, p. 388.

² *Ibid.*, p. 197.

³ *Ibid.*, pp. 328-336.

In this instance, women have not followed, but have rather abandoned their work.

(a) *Bakeries*

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
144,782	17,967	12.4% ¹

Women are confined chiefly to the clerical occupations and to packing. The intense heat and the heavy work of baking itself, has effectually debarred woman from entering the more important occupations. Such work as she does is mainly mechanical and automatic.

(b) *Candy Factories*

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
42,684	20,648	48.0% ²

Little good can be said of this as a trade for women. Wages are particularly low. In 1913-14, the majority of women in this trade in New York State received less than \$6 a week.³ Seasonal fluctuations with their over-employment and their unemployment are characteristic.⁴

Here, as elsewhere, men monopolize the skilled occupations. Pan work and operating the heavier machines which require some skill are distinctly men's occupations.⁵ The "candy-maker" or table worker is likewise generally a man. Miss Phillips, in her study of the industry, enumerates seventeen jobs in which women predominate, that can be learned in a few minutes to a few hours."⁶ 13 other jobs,

¹ *13th Census*, vol. vi, p. 328.

² *Ibid.*, p. 430.

³ *4th Report, N. Y. State Factory Investigating Comm.*, vol. ii, p. 326.

⁴ *Ibid.*, pp. 321-323.

⁵ *Ibid.*, p. 308.

⁶ Anna A. Phillips, "An Investigation of the Candy Industry to determine the possibilities of Vocational Training," *4th Report, New*

10 of which are done chiefly by women, require little more than "a few hours' to a few days'" training.¹

Chocolate and bon-bon dippers are the most highly skilled trades to which women may aspire, but for which as another study says "very few of the packers and wrappers ever qualify."² Though two months or more of training are necessary to produce a good dipper, yet the requirements for entrance are exceedingly low. "The requirements for a hand dipper," says Miss Phillips, "are that she appear neat and healthy and has hands that are not hot and do not perspire."³

(c) *Canneries*

<i>Total No. Employed</i>	<i>No. Women Employed</i>	<i>% Women of Total</i>
15,553	4,926	31.7% ⁴

The investigations of the Consumers League have shown that this industry is one that as now conducted is extremely injurious to women. Long hours of routine work at high speed are characteristic, their industrial life is so temporary that they would not have the opportunity to acquire skill, were any required.

York State Factory Investigating Comm., vol. iv, p. 1355; see also a study of the industry in vol. xviii, of *Report on Conditions of Women and Child Wage-earners*, pp. 119-137. The federal investigation declared that there was "no competition between the sexes, males making the candy and females taking charge of the dipping, wrapping, and packing." The majority of the operations performed by women were described as "unskilled, consisting of simple operations or movements repeated indefinitely." *Ibid.*, p. 137.

¹ Phillips, *op. cit.*, p. 1357.

² *Alliance Employment Bureau*, "Inquiries into Trades for Factory Workers," p. 22.

³ Anna A. Phillips, *op. cit.*, p. 1358.

⁴ *13th Census*, vol. iv, p. 332. These figures do not measure the number engaged in canning at the "peak" of the season.

4. Miscellaneous.

We will consider under this heading a number of industries that are not logically related. By grouping them together, however, we secure a more coherent treatment.

(a) *Cigar and Tobacco Factories*¹

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
195,379	79,486	40.7%

The cigar industry in this country was originally almost exclusively a woman's trade. The wives of Connecticut farmers made up the tobacco into crude cigars which were either sold directly to the consumer or exchanged at the country store for commodities. By 1850, however, factory methods were beginning, and the coming of Spanish, Cuban, and German cigar-makers into the factories displaced the women from their handicraft position. The immigration of trained Bohemian women about 1870 brought more women into the trade. Unlike the farmers' wives, they did not own the raw tobacco nor the homes wherein they worked, nor could they market the finished cigar. They were dependent upon a capitalistic entrepreneur for the purchasing of the raw material and the selling of the product. Consequently they worked under the domestic or "putting out" system rather than the handicraft system. The development of machinery made the work more unskilled and thus made it possible to employ more women. Women were also introduced into the trade by the employers in an attempt to break the power of the unions.²

It is difficult to separate cigarette from cigar making but in 1910 women formed 40% of the employees in the tobacco

¹ *13th Census*, vol. iv, p. 396.

² For the historical material about women in the cigar industry I have drawn largely upon Miss Edith Abbott's article on "Employment of Women in Industries: Cigar making, its History and Present Tendencies," *Journal Political Econ.*, vol. xv, pp. 1-25.

industry as a whole. The Federal Investigation into the Condition of Women and Child Wage-earners found that in 58 typical cigar factories visited, women comprised 67% of the total force.¹

Woman's work in the factories is diverse in character. In some factories they are absolutely unskilled while in others they are the "pickers" and "makers," which are the two most skilled occupations in the trade. Taken as a whole, however, the federal report concluded that "Women predominated in the unskilled work, and that they are losing ground in the skilled occupations."² Women are more and more going into occupations like stripping and light machine operating, which require little skill.

Cigarette making is less of a domestic industry than cigar-making and is more in the factory stage. A cigarette plant employs on the average more men than a cigar factory,³ and this permits the introduction of machinery to a greater extent than is possible in the smaller cigar factories.⁴ This susceptibility to machine methods is moreover increased by the fact that cigarettes are a more uniform and standardized product than cigars and require fewer processes. Because of this fact, specialization is naturally greater in cigarette than in cigar-making.

¹ *Report on Condition of Women and Child Wage-earners*, vol. xvii, p. 89.

² *Ibid.*, p. 91.

³ *Ibid.*, p. 77. "In 1905, the average number of wage-earners per cigarette factory was 28.8 while for cigar factories the average was only 8.3."

⁴ The question as to whether large-scale production causes the introduction of machinery or whether the introduction of machinery causes large scale production is a logical tangle which is impossible to determine. It is not a question of cause and effect but of inter-action. A plant must be organized upon a fairly large basis to afford the heavy overhead expense of machine introduction; this introduction in turn increases the output and paves the way for expansion upon a still larger scale. Here as elsewhere in industrial life, growth is cumulative.

The Federal Report says of cigarette making, "Practically none of the female wage-earners can be called skilled. In many of these occupations, a brief training is required, but there is no operation in which the necessary knowledge cannot be easily gained in a few weeks."¹ The differentiation between the work of women and of men is brought out by the division of machine operations. Making oval cigarettes requires strength and mechanical knowledge on the part of the operator; hence these operators are nearly all men. Round cigarettes are made on a simple and light machine, therefore women predominate in that branch.

(b) *Clock and Watch Manufacture*²

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
26,036	8,717	33.5%

In this industry, women work at a multiplicity of operations. Some of the work such as soldering and japanning is unskilled drudgery, some operations such as making mainsprings, finishing the parts, and adjusting the balance wheel require the highest delicacy of touch and accuracy of judgment. In case-making, an important and skilled branch of the clock industry, men predominate to the almost complete exclusion of women.³

(c) *Jewelry*⁴

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
36,993	9,765	26.4%

¹ *Report on Condition of Women and Child-earners, op. cit.*, vol. xviii, p. 78.

² *13th Census*, vol. iv, p. 366. Women are relatively more numerous in watch-making than in clock-making.

³ For an analysis of watch and clock-making, see *Report on Condition of Women and Child Wage-earners, op. cit.*, vol. xviii, pp. 111-119.

⁴ *13th Census*, vol. iv, pp. 368-370.

Women monopolize the following occupations; chain-making, curbing, enameling, carding, and finishing; all routine and relatively unskilled occupations. The Federal Report says "comparatively little of the work done by them (by women and children) could be called skilled." ¹

(d) *Paper Box Factories* ²

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
22,976	14,324	62.3%

This is predominantly a woman's trade. The work has become highly specialized, and the use of machinery has spread rapidly. The occupations in which women are employed are in the main distinct from those in which men are engaged. ³ Neither technical training nor skill is required, but manual dexterity. Professor Leonard, after an exhaustive study of the industry, concluded that no provisions for vocational education were necessary because of the low-skilled nature of the work. ⁴

(e) *Paper and Pulp Mills* ⁵

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
90,799	13,965	15.4%

Women are chiefly employed as platers, counters, cutters,

¹ *Report on Condition of Women and Child Wage-earners*, vol. xviii, p. 219.

² *13th Census*, vol. iv, p. 374.

³ *Report on Condition of Women and Child Wage-earners*, vol. xviii, p. 258.

⁴ See R. J. Leonard, "An Investigation of the Paper Box Industry to Determine the Possibility of Vocational Training," *4th Report, N. Y. State Factory Investigating Commission*, pp. 1243-1346, esp. pp. 1345-46, where his conclusions are given. For a somewhat more favorable view of the industry. Cf. Alliance Employment Bureau, *Inquiries into Trades for Factory Workers*, pp. 13-18. Case making for jewelry and silverware, a hand trade, is found by the Alliance Bureau however, to be one in which women do the low-grade work, see *ibid.*, pp. 23-29.

⁵ *13th Census*, vol. iv, pp. 376-378.

and trimmers, sorters and rag-pickers. All of these jobs are either completely unskilled or require but little skill from the worker. The upper grades of the industry such as pulp colorers, grinders, and beater-men have not as yet been penetrated by the women.

(f) *Blank book, envelope and tag factories*¹

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
19,321	8,891	46.2%

Here also woman finds the chief source of her employment in the lower grades of work. Women fill positions such as binders, folders, inspectors, unskilled machine-hands, packers, pasters, and sorters; all quasi-automatic positions. Men predominate in color-making, cutting, printing, and as pressmen; these are higher grade jobs.

(g) *Printing and Publishing*²

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
355,674	76,676	21.5%

There are two branches to this industry: newspaper and periodical printing, and book and job printing. Though separate figures for the two fields are not given, women are relatively more important in the latter than in the former. In 1905, they formed 18.5% of those engaged in newspaper printing, and 23.4% of those in the book and job end of the industry.³

Women are almost wholly confined to hand composing. Here they set up the "straight" matter, but do not do display work. The introduction of machinery has taken over much of the hand composing, but the machines are seldom run by women. This is due to the fact that they do not

¹ *13th Census*, vol. iv, p. 376.

² *Ibid.*, p. 378.

³ See *Report on Condition of Women and Child Wage-earners*, vol. x, p. 188.

run machines as swiftly or as skillfully as men.¹ Thus women in the printing trades do not compete appreciably with men, save in the field of "straight" printing. Men have the better class of positions to themselves.²

Book binding in the 13th Census is listed in the printing and publishing trades. Miss Van Kleeck's study clearly shows the subordinate positions which women occupy in this trade. Women work chiefly as folders, pasters, sewers, and examiners.³ These jobs are in the main so simple and repetitive that practical binding experts believe that industrial training is not needed for them.⁴

The more important tasks, such as trimming, rounding, backing and finishing, are performed by men. The line of demarcation between "men's work" and "women's work" is sharp and is one that is seldom crossed.

Summary For Manufacturing

This inductive study of trade after trade has shown, with perhaps monotonous reiteration, that women in practically every trade are congregated in the lowest unskilled jobs and that they thus do not really compete with men. Some cross-section studies that consider the field as a whole, not one specific trade, show this clearly. Miss Butler in her Pittsburg investigation secured the following statistics, covering woman's relation to skilled work.⁵

¹Only 700 of approximately 13,000 machine operators in 1908 were women. See G. E. Barnett, *The Printers*, p. 318.

²For further information upon women in the printing trades see Belva M. Herron, *Labor Organization Among Women*, pp. 15-24. G. E. Barnett, *The Printers*, pp. 316-320. I have obtained much valuable information from an unpublished manuscript by Dr. F. A. Russell on *The Printing Trade of Illinois*.

³Mary Van Kleeck, *Women in the Book-binding Trade*, pp. 28-9.

⁴*Ibid.*, pp. 210-215.

⁵Elizabeth B. Butler, *Women and the Trades*, p. 369. These figures do not include the 6,500 saleswomen in mercantile establishments.

<i>Kind of Work</i>	<i>No. of Women</i>	<i>Percentage</i>
Skilled work.....	139	.8
Handicraft	305	1.9
Hand work requiring dexterity.....	3641	23.2
Machine operating.....	4885	31.1
Machine tending	2188	13.9
Wrapping and labeling.....	2118	13.3
Hand work requiring no dexterity....	2475	15.8
Total	15651	100.0

Thus only 2.7% of these women at work could be called skilled; 23.2% (those in hand work which required dexterity) might be spoken of as semi-skilled. Many of these, however, "learn what they have to do in a week." 74.1% or over one-quarter mastered their job in three days or less.

The following table of 516 women workers shows that little training is needed for the positions women occupy in the textile trades.¹

<i>Days learning present occupation</i>	<i>Number of Workers</i>	<i>Percentage (Cumulative)</i>
1.....	79	15.3
2 or less	105	20.4
3 or less	136	26.3
6 or less	317	61.4
12 or less	445	86.2
30 or less	496	96.1

These figures are exceedingly illuminating. 15.3% of the women workers learned their task in one day. 26.3%

¹ This table is adapted from figures given in Anna C. Hedges, *Wage-worth of School Training*, p. 369. Miss Hedges' study is one of the most admirable pieces of work that has been done in America and is thoroughly trustworthy.

or over one-quarter mastered their jobs in three days or less. 61.4% or over three-fifths, took only a week or less, 86.2% or seven-eighths, required two weeks or less, and 96.1% were able to learn inside of a month. Only 3.9% required more than a month.

It is, therefore clear, that women in manufacturing work almost uniformly at low-grade positions which in the main require neither innate skill nor training. Their labor chiefly consists in the monotonous repetition of simple movements.

E. Trade and Transportation.¹

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i>
7,526,084	935,759	12.4%

Only 168,000 of the 3,200,000 employed in 1910 in the transportation industries were women, or approximately six percent. Indeed, in only one industry did they form an appreciable factor. 88,000 of this number are telephone operators.

(a) Telephone operators²

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i>
97,893	88,262	90.1%

Thus women monopolize the only industry in transportation in which they are appreciably employed.³ Telephone operation in communities of any size is high-strung, taxing work. Quick muscular coordination, high power of concentration and illimitable patience are prime requisites for a successful operator. Indeed, the strain is so intense

¹ *13th Census*, vol. iv, pp. 92-93.

² *Ibid.*, p. 93.

³ During the war, there was an increase in the number of women employed on the various railroads. At one time, approximately 110,000 were employed. By January, 1920, this had been reduced to 90,000. These were engaged chiefly in ticket selling and clerical work.

that the industrial life is very short. In Pittsburg the average length of time that a telephone girl stayed in the trade was only from fifteen to eighteen months.¹ This industry may well be called either skilled or semi-skilled. Telephone managers in various cities estimate that from one year to two years' experience is needed to produce an efficient operator.² Companies are beginning to recognize this fact and are establishing schools where the girls may be trained before they start work, but the low salaries paid militate seriously against their holding the operators for long.

(b) Saleswomen.

It is impossible to secure statistics concerning the number of women employed in the different kinds of stores. The Census differentiates between the owner of a drugstore and the owner of a men's clothing establishment, but does not differentiate between the employees. They are lumped together under such general headings as book-keepers, cashiers, clerks, salesmen, *etc.* Thus the division between the employees is by function rather than by trade.

Bookkeepers and cashiers will be discussed later in connection with office-work as an opening for women. We shall consider here only salesmanship and clerking as opportunities for work.

Clerks and salesmen should form two logically distinct groups. The former covers the administrative and accounting divisions of retail and wholesale trade, the latter the actual selling end. In the taking of the census, however, the enumerators failed to distinguish carefully between these two groups. Many salesmen were undoubtedly counted

¹ Elizabeth B. Butler, *Women and the Trades*, p. 291.

² Nelle B. Curry, *Investigation of the Wages and Conditions of Telephone Operatives*, pp. 2-23.

as clerks and vice-versa. Statistics for both groups are consequently given below.¹

	<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% of Women of Total</i>
1. Salesmen	875,180	250,438	26.6%
2. Clerks	387,183	111,594	28.8%

Can salesmanship be considered a skilled trade? Controversy has raged about that point. The trouble with the supporters of both views is that each has tried to make universal applications of its side of the case. The truth lies in the golden mean. Some types of salesmanship are skilled, while some are unskilled, and no sweeping statement can be made.

Saleswomen in five-and-ten-cent stores certainly are not skilled and do not need training. In fact they are sentinels rather than salesmen. They stand behind a counter, watch the customer make his decision; receive the money, wrap up the parcel and that is all. They are really guards to prevent theft, and also to bring goods from the shelves for the customers' choice, but they do not sell. The customer literally sells to himself.² Girls often work in these stores to acquire some experience so that they may enter other mercantile establishments.

Saleswork in many other stores is similar. A drug clerk, who does not put up prescriptions, needs only to know the stock and bring the customer what the latter demands. He does not need either skill or training. All stores which deal in standardized articles require little selling skill of their employees.

Thus certain branches of department-store work are essentially unskilled. The notion department and the lower positions in the house furnishing and crockery departments

¹ See *13th Census*, vol. iv, p. 22.

² See Iris P. O'Leary, *Department Store Occupations*, pp. 26-32.

require the worker only "to watch merchandise and hand out goods."¹

Department-store work may be divided into three classes, (a) selling, (b) delivery, and (c) office force. The last two occupations may also be designed as "non-selling occupations," and they comprise about fifty percent of the total employees.²

The selling department has a number of sub-divisions. Messenger or errand work is given to young beginners. This requires only the most rudimentary intelligence. Checking or packing is the next position. This demands (1) knowledge of the store system of making out sales-checks in order to correct errors, (2) the elements of arithmetic, (3) some skill in wrapping. The next position in importance is that of stock-girl. This worker should know (1) the various kinds of stock, (2) their place and the quantity kept, (3) the store system of marking, (4) the basic elements of arithmetic, and (5) invoicing.

Sales work is the next step. This requires both technical knowledge and a pleasing personality. The sales girl should know her stock thoroughly; together with the principles of color and design and the various grades of whatever textiles she may be dealing with. Moreover, she should master the store system of marking, of making out sales-slips (often a most complicated procedure), and the rules concerning "charging." She needs a thorough knowledge of arithmetic coupled with ability to reckon rapidly. Local geography, together with the ability to write a legible hand, and ability to spell names and addresses correctly are all prime requisites.

¹I. P. O'Leary, "An Investigation of Department Store Work to Determine the Possibility of Vocational Training," *4th Report, N. Y. State Factory Investigating Committee*, vol. iv, p. 1370.

²*Ibid.*, p. 1379.

Taken all in all, the work of a salesgirl is by no means unskilled. The service which she renders is part of what the customer buys. A pleasant, tactful girl who is able to select goods skillfully is really selling the customer more utilities than an automaton who merely passes goods over the counter.

Sales work in other kinds of stores varies. General stores are similar to department stores, though not on so large a scale. Neighborhood stores with their personal clients, *etc.*, are important factors in many towns and cities.

The personal qualities of the salesgirl are after all more important than her technical knowledge. She must have the latter, but that in itself is incomplete. Mrs. Prince is correct when she says that education¹ of saleswomen must be "first for life and then for salesmanship."²

The stores are coming more and more to realize this. But while they tell their employees that they are skilled workers, they do not generally give adequate wages to the workers. While a minute examination of department store wages would lie outside the scope of this work, the statistics indicate an extremely low scale.³ Moreover, there

¹ Much valuable literature has been written about the possibilities for skill and training in department store work. See Elizabeth B. Butler, "Saleswomen in Mercantile Stores," esp. chap. xi, *Report on Condition of Women and Child Wage-earners*, vol. v, pp. 39-44. D. F. Edwards, "The Department Stores," *Bull. No. 13, Nat. Soc. Promotion Industrial Education*, pp. 6-12. Iris P. O'Leary, *Department Store Occupations* (Cleveland Educational Survey). *The Minneapolis Survey*, pub. by Nat. Soc. Promotion Indus. Educ., pp. 464-515. *The Richmond Survey* (pub. as Bull. 162, U. S. Bureau of Labor Statistics), pp. 42-47 and pp. 227-254. Iris P. O'Leary, "An Investigation of Department Store Work to Determine the Possibility of Vocational Education," *4th Report, N. Y. State Factory Investigation Comm.*, vol. iv, pp. 1364-1405. Lucinda W. Prince, *What the Schools Can do to Train Girls for Department Store Work*, Bull. No. 13, Nat. Soc. Promotion Industrial Education, pp. 12-16.

² *Ibid.*, p. 15.

³ For statistics on this point, see vol. v, *Report on Condition of Women*

has been hitherto an almost universal lack of a promotion system, and little or no reward for the careful or conscientious worker. The National Civic Federation, by no means unfriendly to the employers, declares that "The greatest injustice is slow promotion."¹

The almost universal tendency of the large metropolitan stores is, indeed, either to discharge girls when they become competent to earn a higher wage, or so to discourage them that they resign. The stores prefer to use large numbers of unskilled girls at low wages rather than to employ more thoroughly trained employees at a higher salary. Their practice regarding the encouragement of skill is therefore, the reverse of their preaching.²

The movement to train saleswomen is one of the most interesting in the whole field of vocational education. Mrs. Lucinda Prince is the real originator of this movement, and by an ingenious combination of part-time instruction with actual selling practice in the stores has achieved remarkable results. Of late Mrs. Prince has turned her attention to training teachers of salesmanship, and her

and Child Wage-earners, pp. 39-45. Of the female employees in New York, Chicago, and Philadelphia Department Stores in 1909, 8.4% received less than \$4.00 per week; 17.1% less than \$5.00; 26.4% less than \$6.00; 43.3% less than \$7.00; 57.5% less than \$8.00; 68.6% less than \$9.00; 76.1% less than \$10.00. Only 4% received more than \$15.00 a week and only 2% more than \$20. These figures, when taken into consideration with the fact that \$9.00 was estimated at this time as the minimum sum necessary for the maintenance of a self-supporting woman, indicate the inadequacy of the wage. For New York figures, see those collected by the Nat. Civic Federation, *The National Civic Federation Review*, July, 1913, pp. 22-25. Even these figures collected by a body friendly to the employers, show that 20.6% received less than \$6 per week; 36.5% less than \$7; 51.3% less than \$8, and 63.7% less than \$9.00.

¹ *National Civic Federation Review*, *op. cit.*, p. 24.

² See an article by Elizabeth Dutcher, "Department Store vs. Trade Unions," *Department Store Magazine*, August, 1914, which emphasizes this point.

pupils are rapidly introducing her methods in practically all the large cities of the country.¹

Many stores have also started schools to train the girls within their own store. The Department Store Association in New York City has started several schools for department store workers, while John Wanamaker has long had a system of training for his employees. Besides these private attempts, there are also in New York City, continuation classes for young department-store workers.²

(c) *Clerical Occupations*³

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i>
1,737,053	593,224	34.1%

This group has already been included in the statistics given for particular occupations. To give a separate treatment is then to count them twice. Their problem is, however, so different that it merits special treatment.

(1) Book keepers, cashiers and accountants.

<i>Total No. Employed</i>	<i>No. of Women Employed</i>	<i>% Women of Total</i>
486,700	122,665	25.2% ⁴

The division of labor has extended to book-keeping. As in the factory, it varies with the size of the business. "Book-keepers in the strict sense" says Miss Cunningham, "who keep a complete set of books are seldom found now in the large offices. In their place are many clerks who each do a small part of book-keeping and are called ledger-clerks, cashiers and others according to the nature of the business

¹ See an article by Cassie L. Paine, "Origin and Growth of Movement to Train Teachers of Salesmanship." *Manual Training*, December, 1915, pp. 260-66.

² "Experiments in Industrial Education in New York City," *Bull. No. 263, National Child Labor Committee*, p. 12.

³ 13th Census, p. 94.

⁴ *Ibid.*, p. 94.

of the employer. The results of the work of these many clerks are collected and combined by one book-keeper."¹ A modern book-keeping department often employs over 20 workers with but one bona-fide book-keeper.²

Here as in the factory, women work at the routine tasks. Where the sub-division of labor prevails, they are employed to do only one kind of book-keeping. Their field of work is essentially narrow. The "book-keeper" proper is rarely a woman but almost invariably a man.³

In smaller offices, however, the women have of course more all-round book-keeping work to do.

(2) Clerks (except in stores)⁴

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
730,498	122,665	17.0%

This head includes a most diverse class: Governmental clerks, bank clerks, and envelope addressers are all counted in this category. Here women also occupy the inferior positions. Men monopolize the most responsible positions such as bank clerks, shipping clerks, and the higher positions in the offices of railroad and manufacturing firms.⁵

Miss Cunningham sums up as follows: "While the women clerks employed under Civil Service, may hold responsible and well paid positions, those found in business offices are usually doing work requiring little or no technical training and less general education than in other kinds of office work. They may be addressing envelopes, counting

¹ Women's Educational Industrial Union, *The Public Schools and Women in Office Service*, pp. 75-76.

² Bertha M. Stevens, *Boys and Girls in Commercial Work* (Cleveland Educational Survey), p. 37.

³ *Women's Educational and Industrial Union, op. cit.*, p. 76.

⁴ *13th Census*, vol. iv, p. 94.

⁵ See Bertha M. Stevens, *op. cit.*, pp. 48-53, 81, 94-95.

or checking sales or transfer slips, recording all sorts of business transactions or engaged in that indeterminate work called general office work.”¹

(3) Stenographers and Typewriters.²

<i>Total No. Employed</i>	<i>No. of Women</i>	<i>% Women of Total</i>
316,693	263,315	80.3%

This is woman's proverbial stronghold. Stenography and typewriting has been the “way out” for multitudes of middle class women who have wanted to be financially independent. This branch of work is indeed skilled, and in fact requires far more ability than the average occupant possesses.

Accuracy, speed and a thorough knowledge of spelling, punctuation, and grammar, are absolutely necessary. Personal qualities are almost equally important.

The opening which lies ahead of the typist or stenographer is the private secretaryship. Indeed stenographic work shades into secretarial by infinitesimal degrees. This latter position requires broad general education together with initiative and responsibility.

Though women predominate in this field, many firms prefer men. This preference is due to the fact that men are more permanent workers and consequently the more responsible officers can be recruited from their ranks. Consequently men tend to graduate from this class much more rapidly than do women.

III. Women as Home-makers.

Hitherto, we have considered only women in industry; we now turn to the other field of woman's effort,—home-making.

¹ *Women's Educational and Industrial Union, op. cit.*, pp. 74-75.

² *13th Census*, vol. iv, p. 9. Stenographers and typewriters are differentiated from clerks and copyists because of their ability to write shorthand and to operate a typewriter.

The functions that the modern housewife performs are far different from those which she formerly exercised. When industry was in the domestic stage, the wife as well as the husband, was a producer of the family's income, and the husband, as well as the wife, directed the consumption of the family. The movement of industry from the home to the factory has separated and specialized these dual functions. The husband secures the family income; the wife spends it.¹

There are many who deny that the management of a home is properly speaking a vocation. Their argument seems to be as follows: A vocation is one in which production is being carried on; the modern house-wife is a consumer; she is not following a vocation, consequently education for home management is not vocational, but rather general.²

This is true only if there is a sharp gulf between production and consumption. This gulf does not exist in life. It is true that we produce to consume. It is almost equally true that we consume in order to produce. Consumption is not only the end of production, but it is the means for further production. The consumer who can secure the utmost benefits from a limited income is a true producer. The wife who directs consumption into clean, wholesome, and efficient channels is a producer of values, and an aid to economic productivity.

We are thus justified in treating home-making as a vocation. It is indeed a vocation that has been neglected

¹ Mrs. Julian W. Heath estimates that 90% of the income of a middle-class family is expended by the wife.

² See C. A. Prosser, *What can the members of the General Federation of Women's Clubs do to aid the movement for Vocational Education*, p. 1. "General education prepares us to be intelligent consumers of the material and spiritual goods of life—vocational education prepares us to be intelligent producers of the goods of life."

too long. We Americans have tried to achieve prosperity by increasing our incomes. We are learning that we must also decrease or regulate our expenditures.¹ Since home making is a profession that the vast majority of women must practice, it follows that all girls should be trained for it, whereas only a minority need be trained for wage-earning proper.

What then, are the functions for which the housewife must be trained?² (1) She must be an efficient purchaser. Food and clothes, fuel and furniture, furnishings and fabrics must all be purchased by her. Thus she must know textiles and be able to appreciate the economic, aesthetic, and sanitary qualities of the various grades. She must know food values and market conditions; not only must she purchase foods in the proper amounts and proportions, but she must guide her expenditures by the family income. (2) She must direct the material management of the house itself. A knowledge of nutritive values of food and an ability to cook well and economically is necessary. If the housewife is to employ domestic labor, she should be acquainted with the elements of the labor problem and to be able to standardize and arrange the work to be done.

(3) She must be an accountant. The home as well as the business should be able to balance its expenditures, against its income. A family cannot expect to attain efficiency in its consumption unless it has this monetary record of its expenditures. (4) She must know the principles of health: Home sanitation, the maintenance of a physical inventory, and the elements of nursing and infant welfare

¹ Cf. Wesley C. Mitchell, "The Backward Art of Spending Money," *American Economic Review*, vol. ii, pp. 269-281.

² I have derived many hints from an admirable article by Mrs. H. M. Hitchcox, "The Business of Home-Making," *Proceedings Ninth Annual Convention of the Nat. Soc. Promotion Industrial Education*, pp. 187-195.

are all necessary. Moreover, she should be so equipped that she may train her children completely until the age of six and after that constantly supplement the work of the school.

(5) In order to be a good mother and house-wife, her work must not be restricted to the confines of the home itself. She should know the proper opportunities for family recreation, and if they are not present, be able and willing to cooperate to secure them. It is an integral part of her qualifications that she be interested in and able to pass upon school training and administration.

(6) Woman must not be completely subordinated to the home itself. "Kirche, Küche, und Kinder" should not fill her whole horizon. Most men have emphasized the importance of training in home-making because of the fear that otherwise they would not be comfortable. We should recognize that woman is a free functioning personality, and that the training given to make her more efficient should not obliterate the emphasis upon her right to think and act for herself.

IV Summary

Women in industry perform low-grade, routine operations. They are seldom employed in the same occupation with men. The wages of men and women are indeed fixed in different markets.¹

(1) Women in agriculture are not skilled farmers and need little or no training.

(2) Little skill on the whole is required, in domestic and personal service as it is now conducted. There are however, opportunities to develop and train this class of workers which have not been seized.

¹ See a note by Emilie L. Wells, *Am. Ec. Rev.*, vol. ii, p. 439. Also Sidney and Beatrice Webb, *Problems of Modern Industry*, pp. 63-64.

(3) In manufacturing, women are at the bottom of the industrial ladder. They work chiefly at automatic tasks and taken as a whole, do not need much vocational training for their specific tasks.

(4) The situation is brighter in mercantile occupations. More training is undoubtedly needed by the workers, although it is questionable whether this can extend very far.

These conclusions, based upon a study of specific occupations, do not prove that women should be denied vocational training. They merely indicate that if women are to stay in their present position in industry, industrial training is, on the whole, unnecessary. If women, however, desire to attain higher places in industry, vocational training would constitute an avenue whereby they might escape from their present positions.

The great barrier to women entering these higher grades of labor is, of course, marriage. Matrimony necessarily makes women temporary workers. It renders them unwilling to undergo prolonged training for a brief industrial career, and makes employers, on the other hand, reluctant to give them a chance at the higher positions lest they suddenly leave the industry and necessitate the breaking in of a new worker. As long as the modern type of family exists, it is probable that the mass of women will continue to work at the lower grades of labor, although they need not be confined to as low-grade work as they now are.

Women do need education during their industrial life, but this education should be primarily for life and only secondarily for industry. Health, civics, and industrial history are needed to make the girl an efficient and interested citizen. Instruction in dress and purchasing is also essential. Finally, it should not be forgotten that ultimately most of the girls will become wives and mothers. Individual manufacturers cannot be expected to educate their

female employees for this career, but the state must do so. If it is a social duty to prepare men for their vocation, it is equally a duty to prepare women for theirs. Training for home-making and for life, as well as for industry, should then be an integral part in any system of vocational education for women.

CHAPTER VII

MANUAL TRAINING

THE first movement to put vocational content in our school system was that to introduce manual training. Our system of manual training came to us from Russia, which in turn derived it from Finland. In the late fifties, Cygnaeus, a Finnish educator, devised a system of hand work for the schools, which was an extension of the educational theories of Pestalozzi and Froebel. The kindergarten method of Froebel was based upon the belief that children are educated through the senses rather than by purely intellectual processes, and that hand-work thereby has distinct educational value. Froebel believed that the child secures self-expression and mastery by the use of objects and he organized a series of "gifts" and occupations "which interest and develop the child."

Cygnaeus supplemented the Froebelian materials by giving the older children as well certain kinds of handwork such as joinery, turning, basket making, *etc.* These occupations were designed to train the hand in developing a sense of form, and of aesthetics. The system of Cygnaeus had two fundamental characteristics: (1) it was for primary schools; (2) the occupation taught should not be regarded as preparation for a trade but always as a means towards formal and general education. In 1866, Finland made the system obligatory in all primary and normal schools.

Russia copied and amended this system but did not put it into effect in the primary schools as in Finland, but in

the Technical Institutes which admitted only boys of 18 and over. The system was sub-divided and the tools, and the material used in the construction of the article were each studied. There was no intention of giving training for specific industries. The work was designed solely to train the eye and hand, and to develop accuracy.

The Russian educational exhibit at the Centennial Exposition, Philadelphia, in 1876, contained a full account of the methods practised in the Imperial Institute and illustrated the system with sets of models and other materials. This exhibit attracted a great deal of attention and brought the movement into our educational life. The movement was at first called "sloid" (its name in Sweden) but Professor Woodward of St. Louis gave it the name of "manual training" which was generally adopted.

President John D. Runkle of the Massachusetts Institute of Technology was an enthusiastic propagandist of this new movement, and due to his efforts tool instruction was established at M. I. T. in 1877. Due to the work of Professor Woodward, a Manual Training School was started in St. Louis in 1880 and from then on the movement gained ground rapidly.

The adherents of the old cultural education and the supporters of manual training engaged in spirited discussion over the merits of the system. The former claimed that manual training was not educative and that it should not be introduced into the curriculum. The latter argued that education should be for life and that manual education was as truly cultural and preparatory as was literary education itself.

Slowly but surely manual training began to gain ground. The National Education Association became more and more friendly to the idea. Various schools began to introduce it into their curricula and industrial drawing in particular

became a common subject in the high school curriculum. New manual training schools sprang up in St. Louis, Chicago, Toledo, and Louisville. New Jersey in 1885 encouraged the spread of manual training by offering to duplicate the appropriation of any annual sum from \$500 up to \$5000 by any locality. In the late eighties, Massachusetts made it obligatory upon every city of 25,000 or over to provide manual training in the high school system.¹

As manual training developed it grew to have quite different principles from those which the founder Cygnaeus had worked out: (1) as in Russia, it was used chiefly in the high schools and not in the primary, but also (2) it came to have a distinct commercial purpose. It was used in part as a means of training workmen for their industrial life, if not for their specific trade.

Manual training was taught in the high schools in three ways: (a) It was taught as a part of the general curriculum, which all high school students must study. The reluctance of teachers to admit manual training to the high school curriculum and their indifference and hostility towards it after admission made this system difficult of administration. The teachers selected to conduct the manual training courses were not only often out of sympathy with the subject but were in many instances incapable of teaching it. (b) It was taught as a separate course of study in the general high school, parallel to the college preparatory, the English and the business courses. Here greater cohesiveness was given to manual training, and since the department was differentiated from the others, greater specialization could

¹ For the early history of manual training in this country, see H. Ross Smith, "Development of Manual Education in the U. S.," *8th Annual Report of Commissioner of Labor*, 1892, pp. 14-79; *Report Commissioner of Education*, 1893-4, vol. i, pp. 877-949; *Report Commissioner of Education*, 1903, vol. i, pp. 1019-1041.

result. (c) It was taught in an independent high school devoted to manual training alone. Cultural studies were present in the curriculum but they were subordinated. These independent schools were established because: (1) the traditions of existing high schools were antagonistic to manual training. (2) Since manual training required a longer school day than ordinary high school work, the manual student would be compelled to stay at school longer than his fellow students in other departments. This inevitably caused dissatisfaction and made pupils reluctant to enter the manual training department. In a school within which hours were uniform this difficulty could not arise. (3) A concentration of interest would result from isolating the manual training work. (4) There would be a concentration of administration and responsibility. Undoubtedly the main reason was in order to get the schools out of the hands of the educators who disliked practical studies and to get them into the hands of those who were sympathetic to the movement.

This movement of manual training from a study within the high schools to separate schools of its own was not strictly chronological. Some manual training high schools were started independently at an early date,¹ but the general movement tended to pass through these three stages. The number of independent manual training high schools increased from 15 in 1894 with 3,300 students to 40 in 1897 with 13,900 students.² This development illustrates the biological principle that function precedes structure.

Manual training thus came to be used to train workmen as well as to give general education. For a long time, the supporters of manual training protested that this was not

¹ Notably the St. Louis manual training school which was founded in 1879.

² *Report Com. of Educ.*, 1906, vol. ii, pp. 1043.

true. Professor Woodward declared in 1890 that "In a manual training school the aim is not the narrow one of learning a trade. Neither is dexterity sought in special operations which may be only small parts of even a trade. The object of every feature is education in a broad and high sense. Its influence is subjective. In the case of tools, intelligent use, rather than dexterity, is aimed at. Some one has suggested that manual culture was a better name than manual training in as much as the manual features take on so clearly the form of culture."¹

Despite these protestations, however, manual training came to be regarded as a means of industrial training. It was used not to train boys for a specific trade but to give an all-round mechanical education which would greatly increase their industrial efficiency. In 1903, Professor Woodward himself stated "by multiplying manual training schools we solve the problem of training all the mechanics our country needs."² This last statement shows how the idea of mechanical education had permeated the system of manual training and had changed the earlier conception of manual training as a cultural subject only.

This development of manual training away from its original purpose was caused by three forces:

1. In the Scandinavian countries woodwork had been the chief form of manual training. When introduced into this country, it was applied to metals as well. Wood lends itself to tool manipulation since the pupil through the use of the tools acquires dexterity and co-ordination of eye and muscle. Steel, however, does not lend itself so

¹ Calvin M. Woodward, *Manual Training in Education*, pp. 61-68.

² C. M. Woodward, "Manual Industrial and Technical Education in the United States," chap. xix in the *Report of the Commissioner of Education for 1903*, vol. i, p. 1039.

readily to this purpose. Here the machine and not the tool becomes more practicable. With this comes the subordination of the individual. No longer is he the craftsman but he is now merely the unleasher of objective power. Cultural education diminishes while the mastery over machine processes increases. Consequently, vocational education steals in unawares.

2. The creation of the independent manual training high school freed the movement from the cultural spirit. Once independent, the theory that manual training should be merely cultural became weaker and it was but natural that vocational education should make a stronger appeal. When fighting for its life, manual-training adherents could not declare too pronounced views lest the whole movement be swept away.

3. The industrial condition of the time was more fundamental than either of these two factors. Apprenticeship had long since been on the wane. Skilled workmen were needed for the upper grades of machine labor. There was a real dearth of competent foremen and machinists. What was more natural than that the employing class should try to capture the manual training movement and make it an organ which would satisfy their needs for skilled labor? The separation of manual training from the literary education of the day made it possible to take hold of these schools and help dictate their policy. Indeed the business and commercial interests often played the part of educational midwife and assisted at the birth of many of these independent schools and were strong believers in their separation from other high schools. The manual training schools of St. Louis, Chicago, and Cleveland, indeed owed their creation almost entirely to the interest of the business classes.¹

¹ *Commissioner of Education*, 1893-4, vol. i, pp. 884-885, 889-890 and 893.

Manual training was not, however, confined to the high schools alone. It spread into the elementary grades as well. In 1908 there were 502 cities which gave manual training in the public schools.¹ This form of manual training was really the result of two influences, (a) the spreading downward of manual training from the high schools, (b) the spreading upward from the kindergarten. The vocational features of manual training disappeared in this process and in the elementary grades it was purely cultural.

The total number of students given some form of manual training has steadily increased. This development is best shown by several tables.

We shall first consider the number of separate manual training schools and their total enrollment.

NUMBER OF PUBLIC TRAINING SCHOOLS OF HIGH SCHOOL GRADE ²

<i>Year</i>	<i>Number</i>	<i>Enrollment</i>
1894	15	3,362
1895	15	4,892
1897	40	13,890
1913	51	50,975

Thus while the number of schools has increased about three-fold the number of students has increased fifteen-fold.

These figures do not measure the total number receiving manual training. In 1913, there were 200 additional manual and industrial training schools with a total attendance of 82,839.³ Of this number, 52,870 were students of secondary rank receiving instruction in the manual arts. The remainder who received manual training were elementary pupils.

¹ *Report Commissioner of Education, 1900-09, vol. ii, pp. 1046-49.*

² *Report Com. of Educ., 1906, vol. ii, p. 1050; Report Com. of Educ., 1913, vol. ii, p. 517.*

³ *Report Com. of Educ., 1913, vol. ii, p. 552.*

Nor is this all. Manual training courses have continued to be given to an increasing degree, in the regular public high schools. In 1913, 1,167 public high schools had 50,543 students in manual training courses.¹

In 1913, therefore, the following number were receiving some form of manual training in secondary institutions:

<i>Institution</i>	<i>Number</i>	<i>Percentage of Total</i>
1. Public Manual Training High Schools	50,975	33.0
2. Manual and Industrial Training Schools	52,870	34.2
3. Public High Schools	50,453	32.8
Total	154,298	100.0

The relative numerical importance of these schools is therefore equal. The 51 high schools devoted to manual training had as many students in manual training as the 1,167 high schools giving some manual training courses.

The distribution by sex of these students follows:

<i>Institution</i>	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
1. Public Manual Training High Schools ..	32,134	18,841	50,975
2. Manual and Industrial Training Schools	35,264	17,606	52,870
3. Public High Schools	43,821	6,632	50,443
Total	111,219	43,079	154,298
Percentage	72.1	27.9	100.0

Nearly three-quarters of the students of manual training are therefore boys.

Manual training is especially strong in the North Atlantic States. The following table shows this most clearly:

	<i>Number of Schools in North Atlantic States</i>	<i>% of Total Number</i>	<i>Number of Pupils in North Atlantic States</i>	<i>% of Total Number</i>
1. Public Manual Training High Schools ..	18	35.3	24,215	47.5
2. Manual and Industrial Training Schools ..	92	46.0	53,805	68.4

¹ Report Com. of Educ., 1913, vol. ii, pp. 498-516.

Nearly one-half the students in the specialized manual training high schools and over two-thirds of the students in manual and industrial schools are residents of the North Atlantic States. They are indeed residents of a specialized section of the North Atlantic States. Since the upper tier of the New England States had no special schools for manual training, all the students in this group came from Massachusetts, Rhode Island, New York, New Jersey and Pennsylvania.

Manual training has not proved a solution of the problem of industrial education nor can it. We have seen that the vocational purpose was an afterthought, grafted upon an educational system originally designed as purely cultural. Manual training courses in public high schools have been too often farcical as regards adequate preparation for industry. Only a few hours a week are devoted to them; the equipment is scanty; the teachers are ill-trained. Work is generally confined to carpentry, cabinet making, and wood-work in general. Little or no attention is paid to other branches of industry. Moreover, the work is done on a handicraft rather than upon a machine basis. A great deal of care is lavished upon the production of one article and the fact that the machine industry demands quantitative rather than qualitative production is neglected.

Nor have the specialized manual-training high schools been more successful. Here facilities are better but still inadequate. In 1912 the expenditure per student in these schools for tools was only approximately \$2.00 for the year and a similar amount for materials. Certainly not much trade knowledge could be acquired with such equipment. As Dr. David Snedden says, "the spirit of approach has been that of the amateur or dilettante rather than of the person interested in obtaining vocational fitness."¹

¹ David Snedden, *The Problem of Vocational Education*, p. 43.

Manual training has been ineffective, moreover, because it has not reached the class who most need industrial education. Since it has been practically confined to the high schools, the children of the poorer class have been debarred from whatever benefits it may possess. It is in the main only the soft-handed class that can afford to keep their children in school for the entire high school course. The high school pupils who do study manual training are, consequently, being prepared for occupations they will never enter.

The following statistics covering the life occupations of graduates of five large manual-training high schools in Philadelphia, St. Louis, Boston and Cambridge show how useless training has been as a means of providing skilled workers for the trades.¹

<i>Occupations</i>	<i>Number</i>	<i>Occupations</i>	<i>Number</i>
Students	287	Artists and Engravers	32
Clerks	282	Railroad men	22
Draftsmen	215	Bookkeepers	20
Superintendents, managers, foremen	198	Dentists	13
Merchants and Manufac- turers	160	Surveyors	13
Civil Engineers	115	Inspectors	12
Salesmen	95	Newspaper Men	12
Electrical Work	91	Designers	12
Teachers	79	Insurance Agents	8
Lawyers	63	Contractors	5
Physicians	58	Plumbers	5
Architects	53	Druggists	4
Machinists	52	Opticians	4
Electrical Engineers	48	Carpenters	4
Mechanical Engineers	36	Clergymen	3
Chemists	33	Pattern-makers	3
		Unclassified and without occupation	400
		Total	2437

¹Report Mass. Commission on Industrial and Technical Education, 1906, p. 196.

Thus, only 168 or 6.9% of the total number of graduates went into mechanical work. The electrical and mechanical engineers, the machinists, railroad men, plumbers and carpenters were alone in going into occupations for which their manual training was designed to prepare. In spite of all the courses given in wood-working, only four, or two-tenths of one percent, became carpenters.

As a system of vocational education manual training has therefore been a failure. It has lately been found that it may have great value as a part of a system of prevocational education whereby the pupil may become better acquainted with his aptitudes and better able to make a rational choice of occupation. Under this plan, manual training ceases to be chiefly a high school study but becomes an integral part of the curriculum in the grades.¹

¹ See Leavitt and Brown, *Pre-vocational Education in the Public Schools*, pp. 20-24.

CHAPTER VIII

TRADE AND INDUSTRIAL SCHOOLS

TRADE schools may be divided into two classes: (1) Public and eleemosynary trade schools. (2) Commercially conducted trade schools.

Trade schools aim to prepare for specialized trades. Unlike manual training schools, they are definitely vocational in purpose; cultural training is negligible and attention is concentrated upon the specific trade for which the pupil is being prepared. They are designed as a substitute for apprenticeship,¹ are generally open only to boys and girls over 16 years of age, and are based upon the theory that industrial training is better given in the school than in the shop.

The trade-school movement for manual training ~~and~~ has passed through two stages: (a) Private trade schools, (b) Public trade schools.

The New York Trade School, founded by Col. Richard T. Auchmuty in 1881, was the first of its kind in America. Courses were given in brick-laying, plastering, plumbing, carpentry, house, sign and fresco painting, stone-cutting, blacksmithing, tailoring, and printing. The bricklaying and tailoring trades were especially well taught.²

The Williamson Free School of Mechanical Trades in

¹ See *17th Annual Report of the Comm. of Labor*, 1902, p. 10. "Training in trade schools is intended to supply the place of the old-time apprenticeship which has nearly disappeared under the conditions of present day industry."

² For a description of these courses see *8th Annual Report, U. S. Comm. of Labor*, 1892, pp. 80-83.

Delaware County, Pennsylvania, was founded in 1888 and opened in 1891. The founder declared that the abandonment of the apprenticeship system and the failure of the public school system to devise a substitute necessitated the institution of a school that would train poor and deserving boys for the mechanical trades. The benefits of the school including board, instruction and clothing for the entire course were made absolutely free for all students. This necessitates a thorough winnowing of the candidates for admission, in order to obtain the most worthy. The pupils are formally apprenticed to the Board of Trustees for the period they are in the school.

The following trades were taught in 1910: bricklaying, carpentry, stationary engineering, machinists, pattern-making. The graduates of this school during the years 1905-1909 totaled 268, of whom 91% were actually engaged in the mechanical trades.

The Baron de Hirsch Trade School was founded in 1891 from the endowment of the Baron de Hirsch Fund. Candidates for admission must be Jews and must be at least 16 years of age. Among the trades taught are those of the machinists trade, plumbing, electrical work, carpentry, and house, fresco and sign painting. The school work here is not designed as a complete substitute for apprenticeship but is rather intended as a partial preparation for the trades.

Other private schools founded before 1900 were, (a) The California School of Mechanical Arts in 1895. This gives training in the pattern-making, forging, and machinists trades. (b) The Wilmerding School of Industrial Arts. This was founded "to teach boys trades, fitting them to make a living with their hands, with little study and plenty of work." This school is closely affiliated with the California School. Work is given in carpentry, brick-laying, plumbing, tinning, the electrical trades and cabinet making.

(c) The trade school department of Pratt Institute, Brooklyn, N. Y. This gives trade instruction in several branches, notably carpentry, plumbing, pattern-making, and machine practice and tool-making. (d) The Miller School of Albemarle, Virginia. This gives trade instruction in the later years of a general educational course.

Private schools started after 1900 include the Manual Training and Industrial School of New London, Conn., in 1903;¹ the Winona Technical Institute of Indianapolis, Indiana, in 1904; the Milwaukee School of Trades in 1906; and the David Ranken School of Mechanical Trades in St. Louis, Mo., in 1909.

All of these schools have been established by private endowment and are outside the public school system. Emphasis was completely placed on the vocational aspect and general education was in the main neglected.

In 1906 the era of publicly administered trade schools began.² In this year the Philadelphia Board of Education established a public day trade school to be supported entirely from the public funds. In 1907 the Milwaukee School of Trades was taken into the public school system of Milwaukee. The Columbus, Ohio, Trades School was started in 1909 and trade instruction was given in printing and wood-working. In 1909, Buffalo, New York, instituted a public trade school, followed by Yonkers in 1910. Connecticut in 1909 established at Bridgeport and New Britain two state-supported all-day trade schools. The Portland, Oregon, School of Trades was established in this period under the direction of the school board.

¹ This school was aided financially by the city but not controlled by it.

² The Newark Technical School was opened as early as 1885 under state administration and gave some trade courses. It was however so isolated and had so many other purposes in addition that it cannot be said to have initiated the movement.

In recent years Massachusetts has established a number of public trade schools. In 1914, there were in that state nine trade schools for boys and three for girls.¹ In that year, 772 girls were being trained for the trades of dress-making, millinery, power-machine operating, cutting and fitting, and cookery and sewing. In the same year, 1667 boys were being prepared for machine woodwork, cabinet making, carpentry, machine-shop work, printing, sheetmetal work, automobile manufacture, electrical work, pattern-making, and power plant engineering.²

This development of public trade schools creates certain essential differences. In the first place, more subjects of general educational value are introduced into the curriculum than was the case with private trade schools. English, civics, industrial history, geography, industrial hygiene, *etc.*, are generally found in public trade schools while they were largely non-existent in private. Another difference is that the public trade schools do not uniformly place the minimum age of entrance at 16 as do the private schools.³

Just as in a previous period, manual training had been expected to solve the problem of industrial education, so in the decade 1900-1910, trade schools were thought to constitute the solution. The Annual Report of the Commissioner of Labor in 1902 praised the independent trade school and treated the problem as well on the way to solution.⁴ The

¹ *Bulletin No. 5*, Mass. Board of Education 1914, "Massachusetts Independent Vocational Schools," p. 7.

² *Ibid.*, pp. 17-39.

³ For a description of these various schools see the *25th Annual Report of the Commissioner of Labor*, 1910, pp. 41-141. Also C. R. Richards, "Some Notes on the History of Industrial Education in the U. S." In the *Proceedings of the National Educational Assoc. for 1910*, pp. 678-79.

⁴ *17th Annual Report Commission of Labor*, 1902, pp. 10-12.

Massachusetts Commission on Vocational Education, appointed by Governor Douglas in 1906, in its report envisaged the trade school as the core of any adequate system of industrial education. Arthur D. Dean in his book on *The Worker and the State*, a brilliant argument for industrial education, published in 1910, advocated trade schools as the fundamental basis of industrial education. Mr. Dean declared that "the next step in education is clearly in the direction of building up a great system of public trade schools."¹

This belief in the efficacy of trade-school education was increased by the reports of certain educational "experts" about the hundreds of successful trade schools in Germany. Continental experience was appealed to in support of the system of training craftsmen in all-day trade schools. Unfortunately, however, these "experts" had misunderstood the real nature of the German trade schools and had taken them to be identical with those of the United States.

When Dr. George Kirchensteiner, the celebrated Munich educator came to this country in 1910-1911, the fallacy of this comparison was shown. Dr. Kirchensteiner said, "If I seek to compare German Trade Schools I find that our higher trade schools most resemble your technical colleges. Only we must not forget that there is no transition contemplated from our higher trade schools to our technical universities and that one or two years practical work must be presented or taken in special preparatory courses before admittance to the school.

"Our numerous lower trade schools have no counterpart in the United States...The trade schools of the United States are generally intended to take the place of apprenticeship. The German trade schools on the other hand are

¹ Arthur D. Dean, *The Worker and the State*, p. 159.

*intended, with few exceptions, to make up for the deficiencies of apprenticeship."*¹

Only those who had had at least four years practical work were admitted to these German schools. Consequently only thoroughly trained workmen were received in them.² The difference between this system and the American trades schools is thus clearly evident. Our trades schools were designed to give trade instruction in the schools and prepare men for the industries directly. German trade schools were designed merely to supplement the actual training previously given by the industry itself. Therefore, while our trade schools were a substitute for apprenticeship, German schools were a supplement to it.

A further quotation from Dr. Kirchensteiner brings this point out more clearly: "Schools that replace apprenticeship are rare in Germany. In Austria and Switzerland schools of this kind have existed for the last twenty years, but during these twenty years they have remained at a standstill. Nor can I discover any strong inclination in these three countries to spend public money on such schools."³ Other studies of the German system of industrial education only confirm Dr. Kirchensteiner's statements.⁴

When one examines the situation, the relatively small number of trade schools that have come into being since 1881 is especially striking. Several philanthropic men have endowed such trade schools and the public has started several more, but the total number is relatively insignificant. In

¹ Dr. George Kirchensteiner, *Three Lectures on Vocational Training*, pp. 47-48. The italics are mine.

² *Ibid.*, p. 32.

³ *Ibid.*, p. 47.

⁴ See Holmes Beckwith, "German Industrial Education and its Lessons for the United States," *Bull. No. 19 U. S. Bureau of Education*, 1913, pp. 49-131; George E. Myers, "Problems of Vocational Education in Germany," *Bull. No. 33, U. S. Bureau of Education*, 1915, pp. 7-35.

1911, after thirty years of agitation and example, there were not more than fifteen such schools and today there are probably few over twenty, while the number of graduates turned out is almost negligible in comparison with our industrial population.

California for example has two splendid trade schools yet these are woefully inadequate in supplying her with journeymen. The California Bureau of Labor Statistics declared in 1904 that "The number of journeymen in California engaged in the occupations covered by the curriculum of the Lick and Wilmerding schools is approximately 30,290. The average number of students graduating yearly from these schools is about 30 or approximately one to every thousand journeymen."¹ In 1912, Mr. H. E. Miles stated that the total regular students in all the trades schools in the country were fewer than 2,000 and that the number graduated by these schools was approximately 700 a year.²

The number today is undoubtedly somewhat greater. The Massachusetts trades schools alone have 2,400 pupils. Since the twelve Massachusetts schools comprise approximately one-half of the total number of trade schools, and since most of the other schools have about the same attendance as the Massachusetts schools it is safe to conclude that there are today not far from 5,000 students in the public and private trade schools of the country.

Such a number is plainly inadequate for a system that was designed to take the place of apprenticeship. Moreover, the number of trade schools is not increasing and shows no signs of growth. Although they have had nearly thirty years time, they have failed to perform their mission. The reasons why they have failed in the past are furthermore reasons why they must fail in the future.

¹ *Report of the California Bureau of Labor Statistics, 1904, p. 29.*

² H. E. Miles, *Proceedings National Educ. Assoc., 1913, p. 963.*

(1) The first great reason for their failure is the heavy expense. The cost to the individuals who attend these schools is heavy. An all-day trade school necessarily keeps the boy and girl from work and they must consequently sacrifice the wage they otherwise could earn. Since the school commonly admits only those over 16 years of age, this potential wage is of considerable amount. If we compute the average weekly wage as \$8.00, the yearly earnings would be \$416, minus time lost through unemployment. It is a real sacrifice for most working-class families to forego these earnings and we cannot expect many boys to give up this money in order to continue in school.

The cost, however, is heavy not only for the pupils and for their families but also for society itself. A trade school necessitates a somewhat expensive building, elaborate technical equipment and costly materials upon which the student must practice. In order to give efficient training, it must make itself into something like a shop, and this cannot be done cheaply. The actual cost per pupil is a difficult matter to ascertain and the statistics are not available to give an exact statement, but some incidental figures illustrate the point. The yearly expense per student in the Williamson School of Mechanical Trades, for instance, is over \$300.00, while in the David Ranken school the yearly cost is \$228.00 per capita.¹ According to the supervisor of industrial education in Milwaukee, Wisconsin, the cost per student in the Public Trade School of that city is approximately \$250.00 a year.² Mr. Miles' statement that the yearly cost of instruction per pupil ranges between \$200.00

¹ *Report of Canadian Royal Comm. on Indus. Training and Technical Education*, pt. iii, vol. ii, p. 1414.

² D. F. Perry in the *Eleventh Year Book of the National Society for the Study of Education*, 1912, p. 83.

and \$300.00 seems, therefore, to be a fair and conservative estimate.¹

Many of the trade schools have tried to reduce the expense by economizing on the use of materials and tools. This economy necessarily has lowered the quality of training given since a good school cannot have poor equipment. If trade training in the schools is desired, the community must pay the cost.

(2) The trade schools, moreover, have failed of their purpose not only because of the expense to those trained and to the state, but also because the school cannot, in the very nature of things, adequately prepare a boy to enter industry as a skilled worker. The trade school cannot be a substitute for apprenticeship, because the school cannot take the place of the shop. The shop is essentially dynamic; goods are being made and sold and the test of efficiency is applied to action. The school is essentially static, there is an inevitable air of business unreality about the work carried on. Try as teachers or students may, the feeling that they are playing at work rather than working is almost unescapable.

To avoid this, many trade schools have adopted the policy of disposing of their product commercially. It is believed by many that production for sale will cause greater efficiency and an approach to actual shop conditions. It is urged, moreover, that the sale of the product will lessen the net expense of the school.

Among the schools that have consistently followed out this policy are the Manhattan Trade School for girls in New York,² the Milwaukee Trades School,³ and the

¹ H. E. Miles, *Proceedings of First Annual Convention of the National Association of Corporation Schools*, p. 275.

² See Violet Coen, "Shop Methods and the Utilization of Product," *Proceedings of the Ninth Annual Convention of the National Soc. Promot. Indust. Educ.*, pp. 215-219.

³ Charles F. Perry in the *Eleventh Year Book of the Nat. Soc. for the Study of Education*, p. 85.

Bridgeport Trades School. Schools that do not market their product include the Williamson School of Mechanical Trades, the David Ranken School, the New York Trade School, and the Baron de Hirsch Trade School.

Some of the objections to the selling of the product are speedily disposed of. One objection is that since no wages are paid, the school product can and will undersell products competitively produced, and that workers and enterprizers will consequently be forced out of business. The sale of school-made goods does present, though in a much lesser degree, the same danger as the sale of prison-made goods. It can however easily be met. Selling only at market price as is done in Milwaukee is one solution, while still better is that of city or state use of the products so manufactured. Either of these methods prevents the market from being swamped with the products of "cheap labor."

(3) There are other objections, however, which are more weighty. Commercial products manufactured in the school are of two kinds: (1) articles made up in logical sequence during the course in trade experience and afterwards sold; (2) orders received from customers, which are filled regardless as to whether or not they fit into the course of study prescribed. The difference between these two plans largely consists in that the former makes the commercial disposal of the product merely an incident and does not allow it to interfere with the prescribed course of study, while the latter lays greater stress upon the marketing of the product and makes the course of study dependent upon the orders received. The first plan presents few dangers, the latter many.

Under the latter plan, the school virtually imitates the shop. Production for sale tends to become the predominant purpose. The director becomes anxious to make profits and to turn out marketable products which meet the favor of the

trade. In so doing the original purpose of trade schools tends to be neglected. The production of goods rather than the production of skilled artisans is emphasized. The changing of boys about from one kind of work to another is inimical to production for profit and the result is that they are often confined to one or a few lines of work. This is financially profitable for the school but not educationally profitable for the boy. A boy must be taught all varieties of work before he can master a trade. Such teaching is, however, as we have seen, costly, and the temptation to confine him to one job is great, but wherever he is so confined, he is being treated as a worker not as a student.

"Rush orders" present somewhat similar dangers. The continuity of work is broken and the student's attention is concentrated upon the production of an article which is not pedagogically connected with the work he has previously been doing. Furthermore, the speed with which the work must be done is apt to be injurious to the skill of the student.

The dangers of this kind of commercial production are great. They may be avoided by alert and determined directors,¹ but they are always a menace. It is difficult if not impossible for a trade school to seek both profit and trade training.² If it holds to the first, it must neglect the second. The primary purpose of a trade school is not to turn out commercial material but to teach trades.

Nor does the sale of the product materially diminish the expense. The Milwaukee trade school sells its product

¹See E. E. McNary, "If Commercial Articles are Produced How Should the Educational Value of the Training be Safe-guarded," *Proceedings Eighth Annual Convention of the Nat. Soc. for Promot. of Industrial Education*, pp. 149-152.

²See Lewis Gustafson, "Longer Course Schools for Training Superior Workmen," *Proceedings of the Eighth Annual Convention Nat. Soc. Promot. Industrial Education*, pp. 190-192.

yet its annual expense per student is approximately \$250.00.¹ Thus in trying to avoid the unreality of the school training by selling the product, new dangers are created.

(4) There are other factors however which inevitably make the school an inadequate place to teach a trade. Even though the product be commercially sold, the elimination of waste is rarely carried to the degree that it is in the shop itself. Moreover usually only simple trades can be taught as the appliances necessary to teach a complicated trade are so costly as to make them prohibitive. Most schools for boys confine themselves mainly to the building, and the machinists trades; and for girls to the dressmaking and millinery trades. The trades schools have therefore not touched the problems of other trades outside of these few. The expense of equipment is such that it inevitably confines their activities to certain narrow limits.

(5) Another obstacle exists even in those trades wherein training is given, namely that of keeping the school equipment up to date. Modern competitive industry scraps its machines quickly. It discards them if better ones are invented. A school finds it impossible to keep pace. In consequence it is common for the trade school to be teaching trades to boys with obsolete equipment. Such students will not be able to practice their trades efficiently when they enter industrial life as it is.

One justification for trades schools often urged is that they can prepare for specific local trades. There is, of course, a great deal of geographical specialization in the United States. Thus, the shoe industry is concentrated in the cities of Haverhill, Lynn and Brockton, Massachusetts; shoe machinery construction in Beverly, Massachusetts; glove making in Gloversville and Johnstown, New York; the silk industry in Paterson, New Jersey, and the coal towns of

¹ C. F. Perry, *op. cit.*, p. 80.

Pennsylvania; automobiles in Detroit and Flint, Michigan, and in Indianapolis, Indiana; furniture in Grand Rapids, Michigan; collars and shirts in Troy, New York; cheap jewelry in Attleboro, Massachusetts; locomotives in Philadelphia, Pennsylvania, and Schenectady, New York; ready-made clothing in New York City, Chicago, and Rochester; and talking machines in Camden, New Jersey.

What is more natural, it is claimed, than that each of these towns should start a trade school to prepare for their local industry. This belief, however, rests in part on the assumption that the young men will continue to stay in the same city where they were educated. There is, however, no such permanence in American industrial life, since American workers change their residence quite frequently. The Russell Sage Foundation found that only 16% of over 22,000 men investigated in 78 different cities, and that only one-quarter of the American born, were then living in the same city in which they were born. A trade school preparing boys for local trades would not then be primarily preparing them for their life-career. The boys and girls should not be trained in an industry which few of them will later enter. If any trade training is given it should be in industries which are nationwide not local.¹

Because of these inherent defects, not only are trades schools not increasing in number but those that do exist are finding their greatest development in other than their original purpose. The David Ranken School in St. Louis is giving special attention to apprentices who are learning the trades in the shop. Apprentices in the plastering and sheet-metal trades are given supplementary instruction in the David Ranken School.² This trade school has there-

¹ L. P. Ayres, *Some Conditions affecting Problems of Industrial Education in Seventy-eight American School Systems*, p. 7.

² Lewis Gustafson, "The Recognition of Industrial Education in Apprentices by Organized Labor," *Proceedings of the Eighth Annual Conv. Nat. Soc. Prom. Industrial Education*, pp. 134-43.

fore changed from the original purpose of replacing apprenticeship to supplementing it.¹

2. Commercially Conducted Trade Schools.

Public and ~~elementary~~ ^{elementary} trade schools form but a small percentage of the total number of trade schools. Trade schools that are conducted for profit form the vast majority. This type of trade school followed in the wake of the private business schools. It differs from the latter in that it teaches occupations other than the purely commercial ones of stenography, typewriting and bookkeeping.

No one can estimate how many such schools there are. They are not subject to inspection and in consequence official statistics are almost wholly lacking. They are found in the out-of-the-way corners of cities, and are often unknown by the community about them. Many of them evanescent, some are going out of business and others entering.

Some investigations, however, show how numerous they are. In 1915 there were in Chicago alone, 46 commercially conducted trades schools. Nine of these were automobile schools; six taught dressmaking and design; four millinery; three motion-picture operating; two barbering; and two comptometer operating.² In Minneapolis, Minnesota, there were in 1916, 14 such private schools with an annual attendance of approximately 2000.³ The trades taught included telegraphy, tractor operating, window-dressing, barbering, automobile driving, pharmacy, "beauty culture," dress-making, and sewing. The total income of twelve of these schools

¹Lewis Gustafson, "Experts cannot be trained in school alone. Experts must come from a combination of school and trade experience," *ibid.*, p. 192.

²Caroline Bengsten, "Private Trade Schools in Chicago," *Manual Training and Vocational Education*, vol. xvii, pp. 497-510, March, 1916.

³"Report of the Minneapolis Survey for Vocational Education," *Bull. 21, Nat. Soc. Promot. Indust. Educ.*, see chart p. 122.

was over \$84,000 per year. The tuition fee ranged from \$20 to \$100 but averaged about \$50.¹

Such figures indicate what a vast number of these trade schools already exist in the country as a whole. 2000 would probably be a conservative estimate of their number.

Though some of these schools are highly efficient, many are exceedingly poor. On the whole they are wasteful and inadequate and do not teach the trade properly. Much of their expense is competitive. In order to attract students and to enroll them, advertising and "baits" are necessary. Advertisements in the daily papers, circulars, commissions for securing students, discounts for cash payments of tuition and promises to secure positions for graduates are common practices.² A large part of the tuition fee is thus devoted to these competitive expenditures instead of being devoted to trade training itself. Practically all these expenses would disappear in a well articulated public system where competition for students was not necessary for existence.

The equipment of the trade school is such moreover that in most cases it cannot give adequate instruction. Thus, the equipment of one school in Minneapolis teaching tractor operating was absolutely worthless, while two dress-making schools had only about \$100 worth of equipment apiece. Many of the Chicago schools had no facilities for teaching the trades they pretended to teach. Even the best schools cannot afford the costly apparatus necessary to instruct students. Even in the best of schools, the instruction given is intensely specialized. Trade training and nothing else is given while civics, economics and English are eliminated.

Such a system suffers from all the evils of profiteering. The aim of the proprietors is primarily that of immediate

¹ The capital equipment of these schools was estimated at about \$50,000 and the number of instructors totaled 75.

² Caroline Bengsten, *op. cit.*

profits, not that of thorough training. If the student has more money, he is generally urged to take an additional course to perfect himself in the details of the trade. If his money is exhausted, he is hurried out. The inevitable tendency is to shorten the course so that a fresh batch of students may be secured. Thus, schools for barbers "teach" the trade in six weeks, automobile schools in two months but the graduates of such schools are only "quarter-baked" workmen.

Vicious as most of these private schools are they have arisen because of a real need. The breakdown of apprenticeship threw the burden of training the upper class of workers upon other agencies. The public school system, swayed as it was by tradition, responded so slowly that it did not meet the need of the age. Individuals were quick to see the opportunity and to bend it to their advantage. They started schools as business undertakings to supply these workmen. They were far from ideal but they bridged the gap. They did it expensively and wastefully, they gave insufficient preparation but they did give some trade training, even though slight. They cannot, however, be a permanent solution.

There is however another grave defect in addition to those already mentioned. The tuition fee of \$50 or over is sufficient to bar out the largest section of our working population. Therefore, if private trade schools were to be relied on, we would be perpetuating a caste organization of industrial society and would prevent children of the lower strata from rising in the industrial scale.

3. Technical High Schools.

These schools differ from trade schools proper in the following ways: (1) They educate their pupils for different ranks in industry. Whereas trade schools were designed to

turn out ordinary skilled workmen, technical high schools aim to train for positions above this lower level. Their industrial purpose is therefore to provide the non-commissioned officers of industry and not, like the trade schools, to be a mere substitute for apprenticeship. Because of this difference the curriculum of the technical high schools is not as narrow as that of the trade schools. Subjects of more general interest, such as history, economics, and English are treated and mathematics forms an important part of the curriculum.

(2) Technical high schools admit students at a different age than do trade schools. Almost uniformly trade schools fix the age of entrance at 16. Since technical high schools are an integral part of a city's public school system, they must take the graduates from the grammar grades without regard to age.

It is sometimes said that the purpose of the technical high school should be to prepare students for colleges of engineering. This duty however can be performed equally well by the ordinary high school. Others declare it should give general education with some practical work, but this function in turn is performed at present by the manual training high schools. Neither of these purposes would justify the existence of separate technical high schools. As Mr. Bogan says training for some form of industrial leadership should be the dominating purpose of the technical high school.¹

Several cities have adopted these specialized high schools as a part of the public school system. Notable among such schools are the Lane Technical School and the Harrison Technical School of Chicago, the Stuyvesant High School of New York City, the East and West Technical High

¹William J. Bogan, "What is the True Place and Purpose of the Technical High School in the American Public School System?" *Proceedings Sixth Convention, National Society Promot. Industrial Education*, p. 188.

Schools of Cleveland, Ohio, and the Cass Technical High School of Detroit, Michigan. These schools do not confine themselves to one particular trade but instead teach several.¹

Since trade preparation, not college preparation, is their chief purpose, two and three year courses are offered as well as the customary four year course.

These schools have undoubtedly retained many children in school who otherwise would have left. The population of Cleveland, Ohio during the decade of 1900-1910, increased by above 18,000 people annually. Nevertheless during the years 1906-8 the High School enrollment did not increase, being 4,873 in 1906 and 4879 in 1908. Three vocational high schools were instituted from 1908 to 1912. One of these was a commercial high school, while the other two were technical high schools. The enrollment in the Cleveland High Schools in 1912 was 7,800 or a gain of nearly 3,000 pupils in four years. This increase had indeed almost entirely taken place in the vocational schools. The technical schools gained 17% in the year 1911-1912 while the academic high schools gained only 6%.²

The technical high school cannot, however, give advanced work adequately because it cannot successfully imitate shop conditions. The difficulty of getting the students to treat production seriously, the attendant waste of materials, the lack of speed and the minimization of quantitative production all hamper the work.

Such schools moreover encounter the same economic difficulties that the trades schools experience. The education

¹ See an article by James F. Barker, "The Separate Technical High School," *Eleventh Year Book of the National Society for the Study of Education*, pp. 49-67.

² James F. Barker, "The Place and Purpose of the Technical High School," *Proceedings of Sixth Convention National Society Promotion Industrial Education*, pp. 195-6.

is too costly and the poorer pupils cannot afford the time required. Mr. H. E. Miles estimates that the cost per student year in the Stuyvesant High School of New York City and the Cass Trade High of Detroit Michigan to be \$100.¹ This type of school, furthermore, does not touch the children who because of poverty must leave school at 14. It must recruit its members almost entirely from the upper grades of labor and not from the lower grades. Like the trade schools it does not afford a ladder by which men may climb from the unskilled to the skilled labor group

4. Trade Preparatory Schools.

These schools are for the 14-16 year old boy and girl. Unlike the trade school they admit younger pupils and are not designed as substitutes for apprenticeship. They do not aim to turn out highly skilled workmen but rather to give a general preparatory training which will afford a basis for later specialization.

There are hundreds of specialized trades in the United States which if taught in the schools would necessitate minute specialization of the school and the creation of an elaborate and complicated system. Many groups of trades are however similar in materials used, tools employed and in the nature of the final product. Education in the principles common to a group of these trades can be given to the 14-16 year old child and afterwards he can choose a particular trade and specialize in it. Such groups of trades having basic similarities are:²

¹ H. E. Miles, *Proceedings First Annual Convention National Association Corporation Schools*, p. 274. This includes an allowance for interest upon the cost of the school plant.

² I am largely indebted to the admirable classification of the sub-committee of the National Education Association on intermediate industrial schools. See *Proceedings of the 1910 Convention, National Education Association*, pp. 715-719.

(1) Woodworking callings: this includes carpenters, cabinet making, coopers, and saw-mill workers. Many of the subdivisions are exceedingly specialized but they have many common tools and they work upon the same material.

(2) Iron and Steel trades: this includes blacksmiths, iron and steel workers (in mills) machinists, plumbers and gas fitters.

(3) Book-binding and pasting trades: among there are, bookbinders, box makers, and paper makers.

(4) Printers Trades: Though there are many specialized trades yet there are principles common to all.

(5) Leather trades: including, boot and shoe makers, harness and saddlery makers, tanners and trunk makers.

(6) Textile mills, cotton, hosiery, silk and woolen mills. The problem here is more difficult since many of the processes are dissimilar.

(7) Clothing trades: including dressmaking, millinery, seamstress work, tailoring, shirt and collar making, *etc.* All these trades involve sewing. If machine work is used, many of the machines and processes are almost identical.

(8) Stone work industries: This includes masons, roofers, and slaters, marble and stone cutters, *etc.*

(9) Interior work, building trades: Among these, painters, paper hangers, and plasterers. There are many common trade problems in the occupations of this group.

(10) Food industries: This includes butchers, bakers, candy makers.

(11) Tobacco trades: including cigar, plug and cut tobacco, and cigarette making. All these deal with the same material and educational material common to all could be worked out.

(12) Miners and quarrymen.

These groups afford an idea of the field which is open to

the trade preparatory schools. Several such schools have been instituted. Among these are the Industrial School of Columbus, Georgia,¹ the Intermediate Industrial School of Albany, New York; the Rochester Factory Schools, and the New Bedford, Massachusetts, Industrial Schools. In these schools such subjects as industrial history, mathematics, drawing, geography, and other cultural material are given in addition to the general trade preparatory work.

Such schools are performing a very valuable function in giving this generalized training as a basis for later work. The principle is pedagogically sound. It does not try to give a training which it is incompetent to offer from the inherent ineffectiveness of the trade school proper.

Nevertheless under our present system it fails of effectiveness because it cannot teach the class for which it is intended. The families of many 15-16 year old children not afford to keep them in school without financial aid. Therefore, they cannot benefit by this training and are debarred because of their economic situation.

5. *Industrial Schools.*

This term is commonly used in two senses, (a) to designate a school giving instruction in several trades forming an industry, (b) to designate a school for those who are regarded as mentally, morally, socially or economically inferior. It differs from a trade school in that it gives instruction in several trades rather than in one. It is similar to manual training schools in that a manual training school which specialized in wood working might be called an industrial school because of its preparation for this specific industry. On the other hand industrial schools often give such general industrial training that they might well be listed as virtually manual training schools.

¹ See *Bulletin Number 25, 1913, United States Bureau of Education*, "Industrial Education in Columbus, Georgia," pp. 12-30.

These similarities, however, should not obscure the difference between industrial and manual training schools. An industrial school gives much more concrete training and its work is intensive rather than extensive. It aims to turn out a man who is a master of a particular industry instead of one with merely general information about several.

The term "industrial school" connotes furthermore a school giving vocational education to the dependent, defective and criminal classes. The Elmira Reformatory began trade instruction in 1886. It was intended to teach every corrigible prisoner some trade before he was released. By 1892, 32 distinct trades were being taught to over a thousand youths and men.¹ Industrial training has been since introduced into many prisons; notably in the Michigan State Prison.

The rapid progress of vocational education in reform institutions is indicated by the fact that in 1913, only 22 out of 106 retained the word "reform" or reformatory in their title and that nearly all the remainder declared that they were "industrial schools." In practically all of these institutions children are received because of legal commitment, not on account of criminal acts committed by them, but to rescue them from criminal surroundings and from homes where they were ill treated or suffered because of economic dependence.² In 1913, 35,575, of the 50,812 inmates were being taught some trade or occupation.³

Industrial training is given also to the deaf and blind. In 1913, 70% of the 5,000 blind in public institutions were receiving instruction in the industrial departments;⁴ while

¹ For an account of the Elmira system see *Eighth Annual Report of the Commissioner of Labor*, 1892, pp. 623-650.

² See *Report Commissioner of Education*, 1913, vol. ii, p. 623.

³ *Ibid.*, pp. 624-628.

⁴ *Ibid.*, pp. 646-648.

6,800 or 62% of the 11,000 pupils in State schools for the deaf, were being taught some industrial occupation.¹

Many of the feeble-minded in public institutions are also being taught trades. Approximately 6,500 of the 25,000 inmates were taught some industrial occupation in 1913.²

Industrial schools are the predominant type of higher educational institution for the negroes and Indians. 88 of the 214 schools for negroes specifically state in their title that their primary purpose is industrial, and nearly all of these 88 call themselves "industrial schools." Of the 68,000 enrolled in secondary and higher schools for the negroes, 31,000 received industrial training. Some of the Negro schools, notably Hampton and Tuskegee, have attained a very high level of efficiency. Many of the most influential Negroes are advocating that higher education for their race be chiefly confined to vocational training, rather than to cultural training.³

The education which the government has provided for the Indian is almost wholly vocational in character. Institutions such as the Haskell Institute of Lawrence, Kansas, and the Carlisle Indian School, are primarily nothing but advanced and thorough industrial schools. There are 73 industrial training schools for Indians. 13,000 or 88% of the 15,400 students in these schools received industrial instruction.⁴

The somewhat contemptuous attitude which educators and the public have adopted towards vocational education

¹ *Report Commissioner of Education*, 1913, vol. iii, pp. 655-657.

² *Ibid.*, pp. 671-672.

³ The late Booker T. Washington and his successor Col. Moten have been the chief supporters of this idea. W. E. B. DuBois, the negro educator and the editor of *The Crisis*, opposes this view and lays greater stress upon so-called "cultural education." The vocational theory however seems to be winning more adherents.

⁴ *Report Commissioner of Education*, 1913, vol. ii, p. 526.

is evidenced by the preceding statements. Vocational education was thought to be necessary for criminals, wayward youths, and defectives. It was also adopted as the basic element in the instruction of the two races that are regarded as socially inferior; the Negro and the Indian. For all these elements in our population, vocational education was encouraged.

For the normal child of the white race, vocational education was however discouraged. No better illustration of the leisure class ideals which have permeated our educational system could be given. Our educators have implicitly reasoned as follows: "Manual work is debasing and slavish. Intellectual pursuits are ennobling. Therefore, only the notably inferior classes should be educated for manual work, while the rest should be given purely intellectual training."

The practical difficulty with any such theory as this is that most of those who are not given vocational education must later do manual work, for which their purely "intellectual" training has not prepared them. This is the predicament which has followed upon the taking over of the leisure class ideal of education as the basis of our democratic school system. Formerly education had very frankly been for the leisure class who were few in number. When free education was established for all citizens, the content of the old education was adopted by the new system. Whereas formerly education had prepared those who studied for their future occupation, *i. e.*, to enjoy life without working; now the vast majority did not have the economic means to be able to put their education to that use.¹

¹For a brilliant treatment of this subject see John and Evelyn Dewey, *Schools of Tomorrow*, pp. 229-250.

CHAPTER IX

TRAINING OF EMPLOYEES BY THE PLANT

HITHERTO we have been considering efforts being made outside of industry to prepare men for their work. This chapter will deal with the organized efforts made by business establishments themselves to train their employees for the work they are doing or are expected to do.

Every workman has of course, always needed some training in the work he has to do and has received some instruction. This instruction has, however, been generally given by a harassed and overworked foreman who seldom knew how to explain a process. At its best such training was incomplete and sketchy, while at its worst it consisted largely of ill-tempered rebukes. In either case it was costly, because of the decreased production, the breakage and damage, and the abnormal labor turnover that resulted.

In recent years, business units have begun to adapt themselves to the situation and many concerns have functionalized the training of employees in a separate department charged with this work. The training of the workmen instead of being one of the many tasks of the shop foreman, becomes the concern of a plant official or department. Such a step, like the creation of a functionalized employment department, is but the carrying out of the principle of functional foremanship as advocated by Mr. Frederick W. Taylor.

In those plants where such departments exist, it is of course true that the foremen still retain considerable authority and responsibility in the training of the employees. Complete functionalization has therefore not been effected even in those plants where the training department has the firmest foothold and probably will never be completely accomplished. The trend is, however, distinctly towards centralizing training so far as possible under one definite agency. The training given by these business units is of two varieties: (1) instruction in a separate class or school which is for the time being somewhat apart from the actual production process, (2) instruction at the job itself. The first of these gives more the theoretical background for shop work while the second gives concrete production training in an actual shop setting. Much confusion has arisen because many writers have confined their attention to the school work given by a concern and have treated it as the sole branch of educational activity and have ignored the training at the job itself. The term "corporation school" has in itself contributed to not a little of this confusion.

As a matter of fact, many plants use only one of these methods while some use both. In general, it is undoubtedly true that large concerns created special schools for their apprentices and workmen before they established functionalized departments to instruct the workmen in the shop work itself. This was true both because it is always easier to create a new agency apart from the regular organization of the concern than it is to effect a reorganization in the plant itself, and because business men, although ostensibly somewhat scornful of the schools, were yet unable to think in other than school terms. As we shall see, however, the trend has been of late, distinctly towards an emphasis on training at the job itself.

The growth of the general movement is evidenced by the

fact that so far as is known, Hoe and Co., the famous manufacturers of printing presses, were the first large concern to institute a formal school for training their apprentices and workmen in 1872. In 1888, the Westinghouse Machine Co. of East Pittsburg, Pa., started another such school but for over a decade, few other corporations followed their example. In 1901 the Baldwin Locomotive Works inaugurated a somewhat similar system.¹ In the same year the General Electric Co. started its first school for apprentices in its Schenectady plant, and in the following year extended it to its Lynn plant. In 1903 the International Harvester Co. tried to provide organized training for its apprentices.

After 1905, the movement grew rapidly and widely. Many railroads adopted the plan, the first of which was the Central Railway of New Jersey in that year. In the next year the New York Central and the Union Pacific adopted the scheme, while the Atchison, Topeka, and Santa Fé followed in 1907. By the action of these three roads the system was taken from the Atlantic to the Pacific within a year. The plan was quickly adopted by other roads notably the Delaware and Hudson in 1907, the Chicago and Great Western, and the Erie, in 1908, the Lehigh Valley in 1910, the Baltimore and Ohio in 1911, the Illinois Central in 1912, the Southern Pacific in 1913. In 1915 in addition to the roads previously mentioned, the following also had apprenticeship schools: (1) The Boston and Maine, (2) the Canadian Pacific, (3) the Central of Georgia, (4) The Lackawanna, (5) the Grand Trunk, (6) Oregon Short Line, (7) the Southern, (8) the St. Louis & Southwestern, and

¹ See an article by S. M. Vauclain, "The System of Apprenticeship of the Baldwin Locomotive Works" in J. R. Commons, *Trade Unionism and Labor Problems*, pp. 304-315.

(9) the St. Louis and San Francisco.¹ In that year there were in all 108 such railway schools.²

Corporation schools developed rapidly in manufacturing as well as in transportation. A few of the corporations who instituted such a policy, between 1905 and 1913 and the dates of their action are given in the following table:

<i>Year</i>	<i>Corporation</i>	<i>Place</i>
1905	Cleveland Twist Drill Co.	Cleveland, Ohio
1906	Burroughs Adding Machine Co.	Detroit, Mich.
	Consolidated Gas Co.	New York, N. Y.
	Western Electric Co.	Chicago, Ill.
	Westinghouse Air Brake Co.	Wilmerding, Pa.
1907	Lupton Sons Co.	Philadelphia, Pa.
	Cadillac Motor Co.	Detroit, Mich.
1908	Brown and Sharpe	Providence, R. I.
	Cincinnati Planer Co.	Cincinnati, Ohio
	R. R. Donnelly and Sons	Chicago, Ill.
	Fore River Shipbuilding Co.	Quincy, Mass.
	Solvay Co.	Syracuse, N. Y.
	Yale and Towne Mfg. Co.	Stamford, Conn.
1909	Westinghouse Electric & Mfg. Co.	E. Pittsburg, Pa.
	Leland and Co.	Worcester, Mass.
1910	Franklin Mfg. Co.	Syracuse, N. Y.
	General Electric Co.	Pittsfield, Mass.
1911	Warner, Swasey and Co.	Cleveland, Ohio
1912	Royal Typewriter Co.	Hartford, Conn.
	Foote and Davies Co.	Atlanta, Ga.
1913	Packard Motor Co.	Detroit, Mich.
	Fort Wayne Electric Works	Fort Wayne, Ind.
	Curtis Publishing Co.	Philadelphia, Pa.

The year 1913 was marked by the organization of the National Association of Corporation Schools. This asso-

¹The development of the railway systems of corporation schools is well illustrated in the charts included in the *Proceedings Second Annual Convention*, pp. 410-411; *Proceedings of Third Annual Convention*, pp. 168-169.

²*Proceedings Third Annual Convention Nat. Assoc. Corp. Schools*, pp. 168-169. There were in addition 32 railway schools of the Grand Trunk and the Canadian Pacific located in Canada.

ciation was organized to act as a clearing house for the interchange of ideas, to collect and make available data about successful and unsuccessful schemes of educating employees, and to promote an interest in the training of their employees on the part of corporations. The corporation school thus ceased to be the concern of any one individual plant alone, and became the subject of general concern. The strength of the movement was thus enormously increased.

The growth of this organization is well illustrated by the following table.

MEMBERSHIP IN NATIONAL ASSOCIATION OF CORPORATION SCHOOLS ¹

<i>Date</i>	<i>Number of business concerns members</i>
Sept., 1913	37
June, 1914	52
June, 1915	65
June, 1916	102
March, 1917	105
March, 1920	146

These figures are not a complete index of the actual number of corporation schools started in this period. A few of the companies belonging to the association did not actually have such schools or training departments, while the additions to the association are in part due merely to the coalescence of already existing schools. The growth of the association does, however, indicate the heightened interest in the general idea of corporate training for employees.

The National Association of Corporation Schools in fact soon broadened its whole program so that it included the entire educational aspect of industry. To its primary purpose of constituting a forum, the association added the following three functions:

¹Compiled from the monthly bulletins of the National Association Corporation Schools.

1. To develop the efficiency of the individual employee.
2. To increase efficiency in industry as a whole.
3. To influence courses of established institutions more favorably towards industry.

The association has tried to lay down standards for safety and health precautions; to investigate schools for office-workers, adult workers, and for apprentices proper, and to recommend successful features for adoption; to study policies of advertising and retail salesmanship; and to institute approved methods of vocational guidance. In the school work that is given the subjects taught naturally vary with the plant. For the machinists trade, mechanical drawing, shop mathematics and blueprint reading are the most important studies. The training is based upon the problems which arise in the daily work. The school studies are in the main used simply to clarify the practical problems. Text-books, loose-leaf lesson sheets and oral instruction, are all used in these schools. In general, the supervisors of apprentices believe that loose-leaf lesson sheets obtain better results than texts, as the sheets allow greater elasticity and make the studies apply much more concretely to the practical problems of the particular shop.¹

The average amount of time which the apprentices are required to spend in the schools is approximately four hours a week, generally in two sessions of two hours each.² The instructors in these schools are normally taken from the force of the corporation itself instead of being hired from without. This connects the school with the problems of the workshop, and is less expensive because it does not

¹ 30 plants out of 33 declared that lesson sheets were more satisfactory than textbooks. See *Proceedings Third Convention Nat. Assoc. Corp. Schools*, p. 165.

Proceedings Third Annual Convention Nat. Assoc. Corp. Schools, pp. 141-145.

necessitate the employment of a man upon full-time pay to do only part-time work. It does, of course, have the disadvantage that the teacher may be hurried by his other duties that he does not have time properly to prepare his school work.¹

In 1914 the following number of apprentices attended the corporation schools of 51 different companies.²

<i>Type of Industry</i>	<i>No. of Schools</i>	<i>Number of Apprentices</i>
Railways	17	4,451
Manufacturing concerns	34	3,638
	<hr/>	<hr/>
Total	51	8,089

Since the sources of information were limited there were necessarily many plants whose apprentices were not included in the preceding table. Approximately 80 per cent of these apprentices were being trained for the machinists trade for repair work. Thus in the railway schools practically all the men were being trained for repair-shop work. This confirms the statement made in an earlier chapter that manual skill is being largely concentrated in the repairing of machines. Other trades taught are carpentering, plumbing, molding, boiler-making, painting, and decorating, electrical work, blacksmithing, mechanical drawing, pattern-making, and testing.

These apprentice-schools are almost all located in the eastern states. Of forty-one shop schools for apprentices in manufacturing industries which were investigated in 1915, only one was located west of the Mississippi River and only three south of the Ohio River. Fourteen were in the states

¹ For the pedagogical qualities of corporation school work, see A. J. Beatty, *Corporation Schools* (Bloomington, Ill.) especially chaps. iv to viii, inclusive.

² These statistics are compiled from a chart made by the sub-committee on trade apprenticeship. See *Proceedings of Second Convention Nat. Assoc. Corp. Schools*, pp. 404-405.

of Wisconsin, Illinois, Indiana, and Ohio, and the remaining twenty-three in Pennsylvania, New Jersey, New York, Connecticut, Rhode Island and Massachusetts.¹ The railway shop schools on the other hand were much more widely scattered. Forty-eight of the 108 shops in this country, or nearly one-half, were west of the Mississippi, and 11, or 10%, were south of the Ohio.² Most of the corporations that prescribed school training for their employees provide this school themselves and have the work given inside the plant. Some, however, either rely upon the public evening schools or upon the correspondence schools to meet the need but meet part or all of the expenses for their employees.

In addition to these specialized schools for the more highly skilled workmen many concerns have established schools of a more general nature for their unskilled and semi-skilled workmen. These classes are designed to arouse in the employee interest in and a general knowledge of the business. Consequently, lectures are generally given on such topics as (a) the history and importance of the industry, (b) the technological processes of the industry, (c) policies of particular organization itself including its origin, growth, selling policy, labor policy, methods of promotion *etc.* Within the last few years many plants employing large numbers of immigrant-workers have instituted Americanization classes which have devoted themselves largely to teaching English. Lectures are also given in many plants on safety measures and in some, on health care.

It has been unfortunate, however, that the attention of educators and of the public has been fixed upon the school training given by modern business concerns rather than

¹ See *Proceedings Third Convention, Nat. Assoc. Corp. Schools*, pp. 168-169.

² *Ibid.*, pp. 168-169.

upon the shop training, for the former has always been less important than the latter. The real education which a business concern gives to its workmen is always mainly centered about the actual days work itself and "school work" is at best extrinsic to the real core of the production process. Men learn to become good workmen at their job only, by mastering that job and this cannot be accomplished by theoretical instruction, whether inside or outside the factory walls. The development of the functionalized training department, however, has introduced order into the education of workmen on the job where all was previously chaos. A definite plan of training is set up and an agency created to administer it.

The nature of this shop training must naturally vary with the type of worker to be trained. Where advanced apprentices are being trained for executive and high-grade engineering positions the men are changed from one branch of the work to another, once they have mastered a field. They are carefully supervised and a wealth of individual instruction is given them. The most notable concern giving this type of training is the General Electric Company which annually employs approximately 300 college graduates as apprentices. These men are given training in the testing department for one year; after that, as Dr. Steinmetz says, "we provide situations for those who desire to remain with the company and for those whom we consider first class men, further training in an extension course."¹

Where men are being trained for the highly skilled mechanical positions, as in the railroad apprentice schools and many of the large corporations, the shop work of the learners is generally supervised by a specialized agent. This

¹C. P. Steinmetz, "Engineering Schools of Electrical Manufacturing Companies," *Proceedings First Annual Convention, National Association of Corporation Schools*.

man primarily oversees the training given to the apprentices rather than training the apprentice himself. Promotion is thus individualized and the lock-step method is broken; once adept boys have mastered an operation, they can be changed to another job without waiting for their less capable fellows. Should the apprentice need more instruction than can be given by the foremen, the functional supervisor can of course give supplementary training. To do adequate work such a supervisor should not be burdened with the care of overseeing too many apprentices. The general consensus of opinion seems to be that thirty or fifty apprentices per supervisor is the maximum number than can be directed efficiently.¹ In practice, however, many plants have a much higher ratio than this although one manufacturing concern has as low a ratio as six apprentices per instructor.²

The war-time labor shortage caused many employers to install training systems. In these systems, the learners were almost universally trained upon the job itself. Perhaps the most noteworthy development was that of the "vestibule school." This has been admirably defined by Dr. H. C. Link as³

a preliminary training school in which to observe and coach new employees. The vestibule school is to the industrial organization what the vestibule is to the home. In the home it is a place where the entrant stops, wipes his shoes on the mat, adjusts his garments, and performs those duties which prepare him to enter the house proper. In the factory or office it is a place which detains the incoming employee until he has become adjusted to a new environment and has been prepared to handle the essential elements of his prospective work. Having passed through this preliminary stage, he is the more ready to enter upon the work of the main shop or office.

¹ *Proceedings Second Annual Convention, National Association Corporation Schools*, p. 437.

² *Ibid.*, p. 439.

³ Link, *Employment Psychology*, p. 273.

The novices are given training under instruction, on actual production jobs somewhat apart from the main plant process itself. This training department may be completely separated from the rest of the plant, or, if it is unwise to equip such a complete cross-section unit of the plant, it may occupy segregated floor space in each of the regular departments. The segregation permits close supervision and instruction, while the production work gives absolute concreteness of aim. Scores of plants instituted such schools during the war, among which may be mentioned the Lincoln Motors Co. of Detroit, the Recording and Computing Machines Co. of Dayton, and the Curtis Aeroplane and Motor Co.¹

The novices are generally trained in only one operation and naturally their period of training is short. Women in the Recording and Computing Machines Co. were trained for a unit job from three to ten days.² The worker is also given a certain amount of supervision once he leaves the school and starts work in the plant proper. Employees changed to new positions are also frequently sent back to the "vestibule school" for training on their new job.

The development of the vestibule school corroborates the statement made in Chapter V. that most industrial operations do not require long training and at the same time indicates what the probable development of industrial education inside the plant will be.

¹ For a description of these training departments see C. V. Carpenter, "How we Trained 5000 women," *Industrial Management*, May, 1918, pp. 353-57. H. E. Miles, "Vestibule Schools for the Unskilled," *Industrial Management*, July 1918, pp. 10-12. J. W. Russell, "Installing a Training Department," *Industrial Management*, March, 1919, pp. 177-183. H. N. Clarke, "Breaking in the New Worker," *Industrial Management*, June, 1919, p. 497. See also H. E. Miles, "Vestibule Schools," *The Survey*, March 6, 1920, pp. 700-706.

² Carpenter, *op. cit.*, p. 355.

It should not be thought that plant training has been confined to the manufacturing end. Many concerns have installed systems of training for their clerical force and salesmen as well.¹ Here again are found the "Vestibule schools" with their emphasis upon the "actual" job and the auxiliary training work given in school classes.

It is very easy to see that the new system of training employees inside the plant applies many of the features of the old apprenticeship system to modern conditions. Supervised training is given the employee on actual productive work. There are however, certain very vital differences: (1) Unlike the old apprenticeship the new system rarely aims to teach the worker the whole trade. Save in only a few instances the novice is trained at only a limited number of operations. The vestibule school with its instruction at a single operation illustrates the trend towards specialized training. (2) There is in general no fixed period of time which the learner must serve. Some of the corporation schools do have minimum periods for the apprentices to the highly skilled trades, but in the main the work is conducted on a go-as-you-please basis with no fixed period of training. (3) The indenture is rarely used and whatever instruction is given is almost wholly outside any possible legal supervision. (4) Whereas apprenticeship formerly applied almost exclusively to minors, the present system trains workers of

¹ Among the companies that have systematic plans of training their office workers are the National Cloak and Suit Co., the Larkin Co., the Curtis Publishing Co., the Burroughs Adding Machine Co., and the Dennison Manufacturing Co. General financial institutions such as the Equitable Life Insurance Co., the National Surety Co., and the National City Bank of New York City have similar plans. Among the firms that have a thorough system of education for their salesmen are the New York Edison Co., the National Cash Register Co., the Burroughs Adding Machine Co., the Dennison Manufacturing Co., the Packard Motor Co., the American Optical Co., the Cadillac Co., and the United States Cigar Store Co.

all ages. (5) The present system confines its training to instruction inside the plant. Unlike the old apprenticeship, it does not and cannot hope to superintend the learner outside the work place. Nor can it adequately develop the cultural and spiritual aspects of the worker as was the purpose of the institution of apprenticeship.

In conclusion, what may be said to be the merits and demerits of corporation schools and training departments?

They have real advantages, since a corporation knows its problems as no school can know them and its training work has great concreteness. Theory and practice are joined together in every week's activity. A corporation, therefore, can train its employees for their specific tasks more efficiently than can any other organization. The movement is then a real attempt to restore the good features of apprenticeship and to make modern industry a place of learning as well as of doing.

They have, however, certain very decided inadequacies:

(1) The school or training department is scarcely practicable for a small business, since a concern must be of considerable size before it can afford to establish a separate educational department with a special supervisor of training. The corporation school and the specialized training department, must then be accounted one of the advantages of large scale production and as one of the by-products of the capacity of a large concern for specialization and differentiation. A plant must apparently have at least several hundred employees before it becomes profitable to introduce the corporation school. Indeed nine-tenths of the concerns making up the National Association of Corporation schools number their employees in the thousands.

(2) 51 out of 57 apprentice schools would not admit apprentices under 16.¹ Only four schools would admit child-

¹ *Proceedings of Second Annual Convention Nat. Assoc. Corp. Schools*, pp. 408-409.

ren of 14 or under. The fourteen-year-old child is too immature and undependable to be profitably given skilled training by private plants and other agencies are needed to care for those two years in a child's life.

(3) The policy of the corporation school is necessarily shaped by the employer alone. It is, therefore, almost inevitable that social questions such as the merits and demerits of trade unionism should receive biased treatment.

(4) The primary purpose of a corporation school or training department is necessarily profit. As Charles P. Steinmetz, perhaps the ablest and broadest-minded man in the corporation school movement, says: "The limitation of the corporation activities in the educational and similar fields is that given by the limitation of the corporation purpose to earn dividends for its stockholders. No human activity in this or other fields can be justified before a stockholders meeting, which does not show a favorable financial balance, however much the corporation directors may desire philanthropic work."¹

This cash-value test of education is of course dangerous, since what may be immensely profitable to society, may not be profitable to the individual corporation. In the corporation schools the training is thoroughly practical. There is no cultural education at all. Although the vestibule schools do furnish admirable preparation for specific trades, nevertheless, they do not provide broad vocational or civic training. Workmen need to possess a broader equipment than the knowledge of only one process if they are to protect themselves against unemployment. As citizens moreover, their needs are greater than can be satisfied by the business exigencies of the individual plant.

¹ C. P. Steinmetz, "Presidential Address," *Third Annual Convention National Association Corporation School*, p. 52.

(5) The question may fairly be asked: Does this plant training pay for itself after all? There can be but little doubt that the "vestibule" training does. The expense of training is more than compensated by the increased production at work, the freeing of the foremen from instruction, the reduction of breakage and damage whether to the machine, the material or the fellow workmen, together with the reduction of the labor turnover which results.

(6) Finally, it is by no means clear however, that the more elaborate apprentice courses and corporation schools are a paying proposition. In the first place, most of the arguments advanced to prove the economic success of these schools are decidedly inadequate. Mr. F. C. Henderschott of the New York Edison Co. declared that in the year after the introduction of a school for salesmen and other workers the business of his company increased 20.5% as compared with the average yearly increase of 12%.¹ The conclusion was that the school work had been chiefly responsible for this increase. Mr. Henderschott is here guilty of the *post hoc ergo propter hoc* fallacy. A number of other factors might have caused the increase equally as well.

The truth of the matter is that the corporation faces the same obstacle in training its apprentices and skilled workers that the small manufacturers were confronted with in the 19th century, namely that the apprentice may leave upon or before the termination of his term and go to some other company. This is a real deterrent to the individual employer providing training. He is liable to go to the expense of training the boy only to the end that some one else shall obtain the benefits of his skill. The employer must face the question: considering the transient nature of the working force does

¹ F. C. Henderschott, *Proceedings First Annual Conv. Nat. Assoc. Corp. Schools*, p. 404.

it pay *him* (not does it pay the industry) to train his young workers?

The following table shows the number of apprentices taken on trial by various concerns up to 1914, the number graduated, and the number in the employ of the company in that year.¹

<i>Name of Company</i>	<i>Number of Apprentices on Trial</i>	<i>Number Graduated</i>	<i>Graduates Employed with Company</i>
Am. Locom. Co.	807	126	98
Bos. & Me. R. R.	83	27	20
Cen. R. R. of N. Y.	260	36	16
Del. & Hudson R. R.	290	113	86
Erie R. R.	1007	161	104
Gr. Trunk R. R.	1660	225	99
Penn. R. R.	406	219	181
South Pac. R. R.	304	4	4
Cadillac Mot. Car. Co.	580	80	35
Cincin. Planer Co.	50	10	3
Clev. Twist Drill Co.	28	7	1
Foote & Davis Co.	35	0	0
Ft. Wayne Elec. Wks.	11	0	0
Gen. Elec. Co., Lynn, Mass.	1710	156	60
“ (Pattern-making)	177	20	11
“ (Moulding)	171	22	8
“ (Stenography)	19	3	2
“ (Mech. Drawing)	254	57	24
“ (Testing)	98	1	1
“ (Business)	17	4	2
“ (Electrical)	274	93	46
Leland & Co.	30	8	6
Packard Mot. Car. Co.	86	0	0
Western Elec. Co.	111	25	15
Westinghouse Elec. Mfg.	779	133	63
Yale & Towne	212	55	37
Total	9,459	1,585	922

¹This table has been compiled from raw data gathered by the sub-committee on manufacturing and mining, *Proceedings Second Annual Convention National Association Schools*, 1914, pp. 408-409.

Thus only 16.7% of the apprentices who were taken on trial graduated from the course of training and only 58.1% of those who graduated or 9.1% of those taken on trial were at that time in the employ of the company.

Can an undertaking be called profitable when, of every 100 men trained, only 16 complete the course, and only 10 work permanently for the concern that trained them? These corporations have in other words trained 90 men who are working elsewhere for every 10 men so trained who are working for them.

This statement however, needs to be qualified. Many dropped out soon after training began, others were eliminated along the way and the expense undergone by the companies in training such a boy was much less than it would have been had he gone all the way through, and then left to work elsewhere.

It is a curious paradox, however, that it does pay some concerns to lose their apprentices to other plants. The apprentices that leave the employ of the General Electric Company, go as a rule into executive positions with companies using electrical apparatus. Since they have been trained in General Electric methods and accustomed to General Electric machinery and since, moreover, the General Electric has tried to develop an *esprit de corps* among its apprentices, there is every incentive for them to buy General Electric goods. There can be little doubt that sales of the General Electric Company have increased in part just because of this loyalty on the part of its old "boys" who are now with other firms. This is however, an unusual case. Most apprentices do not leave a company to become loyal purchasers from that company, but rather to become employees of a competitor. After all allowances have been made, it is at least possible and in many cases probable that the cost of training the boys is on the whole, greater than the return received.

It seems probable, however that the plant training given in the future will be more in the nature of shop instruction in specialized processes rather than in the more elaborate system of a long-time apprenticeship training. However some skilled workmen are needed and if some plan similar to the Wisconsin apprenticeship system were introduced for the more skilled trades, undoubtedly a greater stabilization would result, and the employer would be given greater assurance of a return upon his investment of training.

CHAPTER X

EVENING AND CORRESPONDENCE SCHOOLS

THIS and the following chapter consider schools that are midway between those of the last two chapters. Chapter VIII. discussed schools that had as their basic assumption that the school could train for industry. The corporation schools described in Chapter IX. are based upon the belief that training in an industry can come only from actual experience in the industry itself and that the school work is merely supplementary. Continuation and coöperative schools stress the importance of shop work more than does the trade or industrial school, but they also lay greater stress upon the school-work that is to accomplish the practical details.

The continuation school differs from the day trade school in that the student is studying while he is already engaged in industry. It differs from the corporation school in that the student is generally instructed outside of the place where he is employed and his education is under the direction of agencies other than his employer.

Continuation schools have two broad purposes: (1) Industrial and (2) social. The industrial purposes of the continuation schools are to prepare the worker (a) for the job he chances to be holding at the time, (b) for a higher position within the same industry, (c) for other industries. The social purposes are (a) to teach the English language (in the case of foreigners), (b) to give general instruction in citizenship, (c) to increase the capacity for enjoyment of cultural things.

Continuation schools may be divided into two main classes, (1) those that are conducted outside of working hours, which are considered in this chapter, and (2) those that are conducted during working hours, which are considered in the following chapter.

Evening schools were an early phenomenon in this country. The early masters were compelled to give some literary education to their apprentices and evening schools were established to provide for this so that the masters might pool the education of their apprentices. Samuel Crane of Dorchester, Mass., kept an evening school from 1790-97 for the apprentices in paper mills and for other studiously inclined boys. There were many evening schools in the middle colonies which had as their chief purpose the furnishing of education to these indentured apprentices.¹ Of course students other than apprentices were admitted to these schools, but the necessity of complying with the educational requirements of the apprentice law gave a certain amount of patronage to these schools and was at least one of the causes for their formation.

Such evening schools continued and increased during the nineteenth century, and the necessity of providing for the education of the apprentices was still one of the causes for their institution. In 1828, the Ohio Mechanics Institute started a school in Cincinnati to which apprentices and sons of members were eligible upon payment of 50 cents a year.² In 1840, the Baltimore, Md., board of education organized six evening schools for apprentices and others.³ Thus evening schools had their origin, in part at least, as a continuation of the apprentice system.

¹ A. W. Brawley, *Schools and School Boys of Old Boston*, p. 24. Quoted by A. J. Jones, *Continuation Schools in United States*, pp. 84-85.

² Chas. Cist, *Cincinnati in 1841*, p. 132.

³ *Report Baltimore Board of Education*, 1860, p. 335.

Evening schools may be classified from the standpoint of control under two heads: (1) Those under private management, (2) those under public management.

1. Evening Schools Under Private Management

The private schools may be primarily conducted either for eleemosynary purposes or for profit. Prominent among the privately managed schools that are conducted primarily for public purposes are those of the Young Men's and Young Women's Christian Associations.

The following table shows the increase of students in round numbers in the Y. M. C. A. Schools.¹

<i>Year</i>	<i>No. of students enrolled</i>
1893	12,000
1900	26,000
1905	33,000
1915	83,000

The increase during these twenty-three years was, therefore, approximately six-fold. The expenditure per student also increased during this time from \$4.33 in 1893 to \$13.90 in 1915, or an increase of over 200%.²

In 1895, three-quarters of the men who took this school work were clerks, but in 1905, only 43% were clerks, while 51% were artisans.³ The average age of these students in 1909 was 23 years, and about 18% were under 18 years of age.⁴ The subjects studied are classified under six heads: (a) Commercial, including business law, arithmetic, book-keeping, stenography and typewriting. (b) Political, including government, economics, social history, *etc.* (c) Industrial, including carpentry, drawing, wood-carving,

¹ *Annual Report, Educational Department of the Y. M. C. A., 1905*, pp. 39-50; *Year Book, Y. M. C. A., 1915-1916*, pp. 24-50, *op. cit.*

² *Annual Report Educational Dept. 1915-16 Year Book, op. cit.*, p. 24.

³ *Annual Report Educational Dept., op. cit.*, p. 29.

⁴ *25th Annual Report Commissioner of Labor*, p. 363.

etc. (d) Scientific, including higher mathematics, physics, chemistry and electricity. (e) Language, including English, French and Spanish, (f) Special, such as law, art and automobiling. (g) Employed boys. This is work specifically adopted to the needs of those already employed. With the decline in the relative importance of the clerical class, commercial subjects have also decreased in importance.

The work is supervised by the educational department of the International Association. Though its power is only advisory, it acts as a clearing house for information and advice. This committee prepares uniform examinations upon the subjects taught and sends them to the local associations. The certificates are granted to those who pass these examinations and in 1901 the certificates had been accepted as credit by 110 colleges and universities. Not many of the local associations use these examinations, however, for only 2.7% of the 82,000 students in 1915 were given the international certificate.¹ Though the Y. M. C. A. is doing good work it can never be expected adequately to solve the problem. First, it reaches and can teach only a comparatively small percentage of those that need training. Only those sections that have an association can benefit by its work. The growth of the educational work is, therefore, dependent upon the growth of the movement, as a whole, and many places that need evening education can not receive it. Not only is there this geographical restriction of the field of service, but large sections of the population within any given territory either will not, or cannot, attend such schools. Though the Y. M. C. A. is attached to no religious body, yet its influence and leadership is overwhelmingly Protestant in nature rather than Catholic. This, to be sure, is caused in part by the re-

¹ 1915-16 *Year-books*, Y. M. C. A., p. 24.

fusal of most Catholics to coöperate with it. The Catholic population, however, looks somewhat askance at it and is loath to utilize it in any way. If Catholics dislike the Y. M. C. A. because it is Protestant, "free-thinkers" dislike it because it is religious. Its somewhat evangelical characteristics cause it to be looked down upon by so-called "rationalists" and to be viewed with a vague distrust by other non-religious or anti-religious people.

Nor are its obstacles geographical or religious alone. There are economic barriers as well. The tuition fees average over \$11.00 per student. To this must be added, (1) dues in the Y. M. C. A. itself, membership in which is generally a pre-requisite for attending classes, and (2) the cost of text-books. It is safe to estimate that an average expenditure of \$20.00 would be necessary to take the school-work offered. Knowing what we do about wages and the cost of living in the United States, we can readily see that this amount debars a large class.

Finally, despite the efforts to standardize and improve the quality of work offered, it cannot be said that the training given is always of a high order. It is often more in the nature of an advertisement for the local Y. M. C. A. than a serious and earnest attempt to improve conditions. Very often the equipment is inadequate and the teachers incompetent.

The Y. W. C. A. also gives instruction in a parallel manner to that of the Y. M. C. A. Its members are fewer and its influence less than that of the men's association, but it confronts the same obstacles.

Another type is that of the privately endowed schools that give evening work. Some of these give all day trade instruction as well. These schools thus perform the double mission of a day trade and an evening school. To the extent that they do give evening instruction to those already employed, they may be listed under the head of eleemosynary evening schools.

Examples of schools that give evening instruction only are (1) the North Bennet Industrial School, (2) Franklin Union, (3) the Massachusetts Charitable Mechanics Association Evening Trades School, all of Boston, Mass., (4) the Ohio Mechanics Institute of Cincinnati, Ohio, (5) the St. George's Evening Trades School, (6) the Preparatory Trade School, (7) the Italian Evening Trade School of New York City and (8) the Virginia Mechanics Institute of Richmond, Va.

Examples of schools that give day instruction as well, are (1) Cooper Union, (2) the New York Trade School of New York City, (3) Pratt Institute of Brooklyn and (4) Franklin Institute of Philadelphia. Cooper Union was founded in 1854, for definite continuation school purposes. It was designed "to give instruction, to those already employed at trades, in such departments of knowledge as might fit them to become foremen, employers and good citizens." Here both the industrial and social purposes are clearly evident. The industrial training was evidently to be given in order that the worker might rise from his position to a higher rank, whether within the same industry or without. The idea of training the worker merely for the particular task at which he is then engaged, which is one of the most important purposes of the modern continuation school, is wholly absent.

Little or no argument is needed to demonstrate the inadequacy of philanthropic evening schools. Philanthropists are relatively few and their gifts are insufficient to meet the need. The problem is too big to be solved by the fortuitous donations of individuals.

In addition to these philanthropic evening schools, there are schools conducted primarily on business principles. In a previous chapter we have discussed day trade schools operated for profit. Private enterprise, however, does not

confine its attention to the daytime. Its night-schools afford an opportunity for those who work by day to study by night. Little need be added to the description of these schools that has already been given. They are in the main inefficient and ill-equipped, and are so expensive that a large class is barred from making use of their advantages.

2. *Public Evening Schools*

Most important of all are the public evening schools. It is impossible to obtain statistics about the early extent and influence of the public evening schools. Here and there in the reports of city school systems and in the reports of the Commissioner of Education, we find references to their existence, but definite figures are difficult to secure. The first compilation by the Bureau of Education was in 1887-88, and the following table shows the growth of the system since then.

<i>Year</i>	<i>Total number of pupils in evening schools in cities over 8,000</i> ¹
1887-88	135,654
1896-97	183,168
1898-99	185,000
1900-01	203,000
1902-03	229,213
1904-05	292,319
1907-08	357,923
1909-10	374,364
1911-12	419,981
1913-14	614,068
1914-15	678,393

These statistics indicate an extraordinary growth since 1911-12 of 260,000 in round numbers or an increase of about 62%. Part of this increase is due, undoubtedly, to

¹ See *Reports Commissioner of Education*, 1887-88, pp. 223-27; 1897, vol. i, p. 9; 1898-99, vol. i, p. 60; 1901, vol. i, p. 9; 1903, vol. i, p. 9; 1905, vol. i, p. 8; 1908, vol. ii, p. 422.

the better reporting of school statistics which the Bureau has secured since 1912. In spite of this, however, there seems little reason to doubt that during the last five years, evening schools have greatly extended their influence.

The evening schools find their chief strength in the cities of over 100,000 population. 45% of all the pupils enrolled in 1914-15 belonged to cities of this class.¹

411,000 or 60% of the students in the evening schools in 1914-15, were males and 267,000 or 40% were females.² That the evening schools do not do advanced work is evidenced by the fact that over two-thirds of the pupils were enrolled in the elementary grades, and slightly less than one-third in the secondary schools.³ The evening schools, moreover, will contain in one class, people of different ages and nationalities. Employed boys and girls of from 14-21 years study along with men of over 30 years of age. American-born children of American parents study in the same room or the same school with foreign-born men—for there are over 175,000 foreign-born immigrants who are studying in evening schools of the country.⁴

In consequence, the evening school curriculum permits only rudimentary work. The courses offered in the evening schools are, indeed, designed more to atone for deficiencies in the common school education which the pupil for one cause or other has experienced, than to act as a continuation of the common school studies. Its training is, therefore, so general in nature that it gives little assistance to the boy in industry who wants to be prepared either for the

¹ 313,253 of the total of 678,393. See *Report Commissioner of Education*, 1916, vol. ii, pp. 72-75.

² *Ibid.*

³ *Report Commissioner of Education*, 1912, vol. ii, p. 30.

⁴ See F. E. Farrington, "Public Facilities for Educating the Alien," *Bull. 18, 1911, U. S. Bureau of Education*.

job he is then holding or for a better one. The American evening school is really a duplication of the day school system, running only at different hours, and its content rarely shows that the educational authorities have realized that they have a different problem to face.

These evening schools are definitely a part of the school system of the various cities. Massachusetts and Connecticut make their creation mandatory to stamp out illiteracy. Nine states (California, Georgia, Kansas, Missouri, New Jersey, Ohio, Pennsylvania, Vermont and Wisconsin) have permissive legislation allowing the establishment of evening schools. These laws amount to but little because they merely formally approve the action of a city but do not encourage it. States which do not have permissive legislation often have as many evening schools as those that do. Of more direct aid are the grants which eleven states: California, Connecticut, Minnesota, Indiana, Maine, New Jersey, New York, Pennsylvania, Rhode Island, Washington and Wisconsin make for the support of evening schools.

Though public evening schools have undoubtedly performed valuable service, they do not, as at present constituted, offer a solution to the problem of industrial education for the following reasons:

(1) The curriculum is so elementary that it offers little opportunity for the boy at work to improve his position.

(2) The teaching force is always overworked and often incompetent. In 1914-15 each teacher (upon the average) instructed forty pupils.¹ This ratio is far too high. Approximately 60% of these teachers, moreover, also taught in the day school as well. Double work of this sort is so exhausting that no one can continue to do justice to both positions.

¹ *Report Commissioner of Education*, 1916, vol. ii, pp. 72-75.

Furthermore, the teachers who instruct in the night school are generally less efficient than the teachers in the day schools. They are either new teachers gaining experience in night work or those whose scholastic rank is low and who are, in consequence, confined to night work. The number of night-school teachers is also swelled by many who follow some other occupation by day and do night-teaching in order to earn a supplementary income. To this latter class, teaching is but an auxiliary line of effort, a crutch to help them hobble along, not the main course of interest. Few of them know anything about pedagogy and their technique is of the scantiest. Because of all these factors, enthusiastic and efficient teaching is a rarity in the public evening schools.

(3) The students who are working by day are generally so tired that they cannot profit from the instruction given.

Modern industry is essentially exhausting. Manufacturing, clerical and commercial occupations are geared at high speed, and an adolescent has little or no surplus energy to expend after a day's work. To expect faithful attendance at, and close attention in an evening school which itself seems inefficient and tired is to expect an impossibility.

The following table shows in round numbers, the enormous loss in attendance which evening schools experience.¹

<i>Year</i>	<i>Total number enrolled in evening schools</i>	<i>Average daily attendance</i>	<i>Percentage daily attend- ance of total enrollment</i>
1908-09	379,000	155,000	41.1%
1909-10	374,000	145,000	39.6%
1911-12	420,000	149,000	35.6%

These statistics are corroborated by those of New York City. Ever since public evening schools were opened in 1847, irregular attendance has been a constant characteristic.

¹ See *Reports Commissioner of Education*, 1910, vol. ii, p. 689; 1912, vol. ii, p. 30.

In the first year, only 35% of those enrolled attended upon the average; forty years later, in 1887, the percentage was 33.8, while in 1910-11 it was 34.1.¹ It is safe to conclude, therefore, that evening schools instruct upon the average only slightly over one-third of those who enroll. Miss Van Kleeck found that in New York, 8% of those who enrolled never attended even one session.² These may be written off as complete deadwood. A comprehensive treatment of any scheduled subject cannot be given with this irregular attendance, and all logical continuity is destroyed.

Even to those who attend faithfully, the evening school is essentially unsatisfactory. The students are tired from the day's work and cannot concentrate upon their studies. The teaching is generally listless and there is an air of irrelevancy about the whole situation that leads the mind to go "wool-gathering." As Miss Van Kleeck says, "the facts seem to us to show conclusively that if a system of compulsory continuation schools for young wage-earners is to be developed, their sessions must be held by day and not by night."³

3. *Correspondence Schools*

Correspondence schools are really schools outside working hours conducted at long range. A few students may devote their entire time to the course of studies and for these, the correspondence schools are trade preparatory and not continuation schools. The vast majority, however, take correspondence courses as a supplement to their daily work. These courses are used to accomplish the three industrial purposes of continuation schools, *i. e.*, to pre-

¹ See Mary Van Kleeck, *Working Girls in Evening Schools*, pp. 143-148.

² Van Kleeck, *op. cit.*, p. 145.

³ Van Kleeck, *op. cit.*, p. 165.

pare a worker for the job he is then engaged at; to prepare him for higher positions within the same industry; and to prepare him for other industries. The last two purposes are of course stressed more by the correspondence schools than the first.

The two varieties of correspondence schools, like the evening schools, are public and private. The public correspondence schools are usually attached to the universities of the country. In 1913, thirty-two colleges and universities gave correspondence courses with a total enrollment of approximately 20,000.¹ The Universities of Chicago and Wisconsin have been the pioneers in this field and have given instruction to tens of thousands by means of correspondence. The Massachusetts Board of Education has recently instituted a state extension system which is largely based upon the correspondence idea.

In all these public systems the courses given are mainly cultural and not directly vocational.² Subjects such as literature, language, history, education, *etc.*, seem indeed to be the most popular. It would be erroneous to conclude that no vocational courses are offered, since the Universities of Wisconsin and Pennsylvania and the Michigan State College of Agriculture offer courses in engineering, agriculture, industry, and business. But such work is distinctly subordinated to the cultural instruction.

The correspondence schools conducted for profit are far more important in point of numbers enrolled than are those conducted primarily for public service. Due to the multiplicity of such private schools and to their secrecy, it is impossible to secure statistics which will accurately indicate their influence and importance. An estimate of several

¹Louis E. Reber, "University Extension in the United States," *Bulletin*, 1914, U. S. Bureau of Education, No. 19, p. 20.

²For analysis of courses given, see Reber, *op. cit.*, pp. 21-26.

hundred thousand pupils enrolled would be, however, most conservative. Some of these schools are downright frauds, giving little or no instruction in return for the fees paid. Most of the schools of caricaturing and drawing are of this stamp. Others have as their main purpose, the sale of a set of books and are really book-firms instead of correspondence schools. Still others specialize in correspondence work but give inadequate instruction, while there are some very reputable concerns which offer a fair degree of opportunity to the student.

The curriculum of this class of correspondence schools is completely practical. Few or no cultural subjects are included. The sole standard that a student of this class of school considers is "will this raise my pay-check?" There is consequently a multitude of courses offered in the fields of engineering, business, agriculture, *etc.*

Though a great deal of incidental good is done in furnishing instruction to ambitious young men, the private correspondence schools constitute in the main, a vicious and inefficient system of education for the following reasons: (1) Many of them are fraudulent. It is difficult for the post-office authorities to detect whether or not a concern is doing a legitimate business. By liberal advertising, it is possible for a company to reap a harvest before a fraud order can be issued. It is possible, moreover, for a concern to stay within the letter of the law and yet exploit its patrons. (2) The degree of efficiency, even among the technically honest firms, is not high. A staff of ill-paid clerks is generally employed at answering letters and replying to questions. Even though the work is standardized, these people cannot furnish complete and accurate information or high-grade instruction. (3) The charges for tuition are too high. The fees per course vary from \$20. upwards; the average charge by the International Correspondence

Schools being \$75. This constitutes a severe drain upon a poor man's resources, and their collection is only possible, because they are paid in installments rather than in a lump sum. Were the tuition fees actually invested in the educational side of the business, no complaint could of course be made, but such is not the case. (4) An enormous amount is wasted in competitive advertising and canvassing. Most of the expenses of a modern correspondence school are indeed in the sales and not in the educational department. One large school claiming an enrollment of 350,000 pupils had twenty branch offices each with its quota of salesmen and employed in all over 2,500 people. Only 370 of these were, however, connected with the educational work! Fifteen percent of the force was devoted to the actual instruction itself, while eighty-five was employed in the administration and sales side of the business. This indicates a shocking disproportion of energy and resources, and is one that would not exist under a publicly operated system with the wastes of competition eliminated.

(5) A further criticism of private correspondence schools is that only a small percentage ever finish the courses that they begin. Veiled in secrecy as the records are, only estimates are possible. The Minnesota Department of Labor Statistics found that less than one-third of those who began courses in Minneapolis, finished them.¹ The percentage, for the country, as a whole, of those who complete their course is probably even less. The Canadian Commission on Technical Education declared it to be as low as 5 or 10 percent.²

(6) Finally, correspondence school courses even at their

¹ "Vocational Survey of Minneapolis, Minn.," *Bulletin 199, United States Bureau of Labor Statistics*, p. 113.

² *Report Canadian Commission on Industrial Training and Technical Education*, pt. iv, p. 1688.

best, are a decidedly unsatisfactory means of education and should be used only as a last resort. The instruction lacks personal touch; there is an inevitable delay in replying to questions which is generally at least as long as a week, and sometimes a fortnight or a month. This robs the study of much of its interest and the student soon loses heart and generally drops out. These schools cannot be called a solution, in any real sense, of the problem of industrial education.

The huge numbers who have sought further technical education at their hands is, however, adequate proof of the fact that the present educational system of the country has failed to meet the needs of the times. Because of the lack of a better system, men have turned to privately managed schools both at long and short range to secure the training that they have needed.

CHAPTER XI

PART-TIME SCHOOLS

1. Introduction.

THERE are two varieties of part-time schools: (1) The co-operative school, (2) the part-time continuation school. These schools differ from evening schools in that they operate within and not without working hours, and that children at work are excused to attend them.

The typical co-operative school alternates school and shop training, giving school training to one set of students for a week, or some such period, and then sending this group to work in some industry and taking in another group who have been employed in industry the preceding week. After another period, the process is reversed. There is thus an alternation between school and shop, between theory and practice. The typical part-time continuation school on the other hand takes all the workers for a few hours every week. The continuation and co-operative schools are alike in that they give training within working hours but they differ in the following respects: (1) In the co-operative schools, there is a rotation of men from school to shop which does not exist in the continuation school. (2) The co-operative school generally takes students and finds a place for them in industry, while the continuation school takes boys and girls already engaged in industry and gives them school training. (3) Much more time is devoted to school work under the co-operative than under the con-

tinuation school. Whatever the length of the "shifts" in the former system, the proportions devoted to school and shop respectively are approximately half and half. In the continuation schools on the other hand, the hours devoted to school work are never more than eight a week or less than 16% of the normal working time of the child laborer. (4) The work in the co-operative school is closely co-ordinated with that of the shop and the work of the students in the industry itself is supervised by the school authorities. In the continuation school, on the other hand, the school training is merely super-imposed upon the shop work and the school authorities do not interfere with the work done in the industry itself. (5) Typically, attendance at the co-operative school is voluntary while attendance at the continuation school is generally compulsory. The co-operative school is established and maintained by the voluntary co-operation of employers with the educational authorities. The part-time continuation schools in the United States are in the main compulsory upon both the employer and juvenile worker. (6) The curriculum of the co-operative school is almost wholly designed to increase the technical efficiency of the individual worker while that of the continuation school normally lays considerable stress upon the social aspects of industry and life. This difference in the curriculum is probably occasioned because attendance is voluntary in the co-operative school while it is generally compulsory for the continuation school. In the former case, the educational authorities are forced to bid for the support of the employers and the employers naturally demand that the school curriculum be made more practical and be confined to subjects of almost immediate trade value. As a report of the Fitchburg, Massachusetts, Co-operative Plan says:

From the first, the employers who offered their assistance in-

sisted that the course be such as to make those going into it better mechanics, capable of advancing to the highest possibilities in the trade. The prescribed studies of the ordinary courses that were included in the coöperative industrial course were, as a rule, changed in form and structure. Many of the time-honored courses were carefully shelved, and such subjects were selected as would fit the students to be intelligent mechanics and thoughtful artisans.¹

The continuation school is not compelled to offer such inducements to attract a clientele. Courses in industrial history, industrial hygiene, civics, *etc.*, are therefore more common in the continuation than in the co-operative schools.

2. *Co-operative Schools.*

(1) The Co-operative system of the University of Cincinnati.

Dean Herman Schneider is the originator of the co-operative system of education. While an instructor at Lehigh University, he conceived the idea of co-ordinating the University work with the large industrial plants in Bethlehem, Pennsylvania. Some of the Lehigh graduates were working for two years as apprentices in the local plant after graduation. It occurred to Professor Schneider that the apprentice course and the college work could be combined in a six-year course with alternate weeks of work and study. This method, he believed, would solve a number of problems. First, it would avoid a duplication of shop-equipment. This would at once enable the student to work with up-to-date equipment, a practical impossibility for a school to supply, and it would relieve the University of the expense of maintaining elaborate mechanical laboratories. Secondly, it would free the University curriculum of purely

¹ M. R. McCann, "The Fitchburg Plan of Co-operative Education," *U. S. Bureau of Education, Bull.*, 1913, No. 50, p. 13.

descriptive courses, knowledge of which could be better obtained in the industry itself. Finally, since the students would be earning money while they studied, many worth while men would be enabled to attend college who otherwise would not be able to do so. Though the plan was favored by practising engineers, it was rejected by the Lehigh authorities.

When Professor Schneider accepted a position at the University of Cincinnati in 1903, however, he convinced the University authorities of the soundness of the plan and in 1906, a beginning was made to put it into effect.

Twelve industrial plants and 28 students contracted to begin the work which was mapped out to cover a six-year period with alternate weeks at the University and in the shop, together with a three-months period of complete shop-work during the summer. The students were to be grouped in pairs, the men taking turns working at a machine and attending classes. This prevented any discontinuity in the work of the plant. The manufacturer on his part guaranteed to move the student-worker about from position to position. Thus, in the electrical engineering course, the manufacturer guaranteed to employ and train the boy for a year and a half in the foundry, for the next year and a half in the machine shop, for two years in the commutation, controller, winding, erecting, and testing departments and the remaining year in the drafting rooms.

The plan was threatened with disaster at the start since Dean Schneider required all of the candidates, in the summer before entrance, to work in some manufacturing plant. The hard work in hot weather discouraged all but six or eight and Dean Schneider was compelled to fill up the ranks from those who were insufficiently prepared. Over 400 inquiries from prospective students were received during the first year and a large percentage of these made formal application

for admission.¹ By 1911, the experimental period was over and the system could well be called a success. By that time a number of changes in the original plan had been made: (a) The six years course of 9 months per year was changed into a five years course running for 11 months per year. (b) The period of alternation between shop and college was lengthened from one to two weeks. (c) The iron-clad contract with the employers was modified and the employers were given power to change a worker whenever desirable. The shop-work was checked by the University authorities to prevent a boy from being kept at one operation too long. (d) The business side of the undertaking was taken from the instructional staff and given to a special official.

The Cincinnati plan was designed for University men but it has been copied by several cities who applied the principle to co-operation between the high schools and industry. The system has thus spread downward in the educational scale.

(2) The Fitchburg, Massachusetts, Plan of Co-operative Education.

The Fitchburg system is a direct outgrowth of the Cincinnati plan. Dean Schneider on one occasion described his system to a group of metal manufacturers, among whom was Mr. Daniel Simonds of Fitchburg, Massachusetts. Mr. Simonds became very enthusiastic over the plan and succeeded in inducing the school authorities of his city to start it in connection with the high-school work.

A director with both shop training and technical education, was employed and in the first year 18 pupils were registered in the course. The main features of the plan are: (a) The course covers three years. One year of regular

¹ C. W. Park, "The Co-operative System of Education," *U. S. Bureau of Education, Bull.*, 1916, No. 37, p. 13.

high-school work being required before the pupil is eligible for entrance. (b) A preliminary summer must be spent in the shops to test the capabilities of the boy. (c) An alternation of weekly periods between school and shop with a consequent pairing off of students. (d) Signing of an agreement or "indenture" by parents and manufacturer. The parent contracts that the boy will complete the school course unless prevented by very unusual circumstances, while the latter contracts to teach the boy the trade mentioned in the agreement. (e) The boy is to be paid wages beginning at 10 cents per hour and finishing at 12½ cents or a total of about \$550 for the three years course. (f) The creation of a director who was to supervise the school and shop work of the boys and co-ordinate the two.

Since its inception in 1908, the plan has flourished. From 1908 to 1913 a total of 134 boys had been enrolled and at that time, about 55 boys were taking the course.¹ The boys graduated have in general gone out into the trade for which they have been prepared and their comments upon the system are very enthusiastic.²

(3) The Beverly, Massachusetts, Plan.

This system, which was instituted in 1909, is unique in several features. A separate school, called the Beverly Industrial School, was created, which was limited to 50 pupils who were to alternate between shop work and school in groups of 25. The United Shoe Machinery Company agreed to fit up a separate department in their factory to accommodate the 25 boys. These boys were to be given all the necessary equipment and trained to be full-fledged

¹ M. R. McCann, "The Fitchburg Plan of Co-operative Industrial Education," *U. S. Bureau of Education Bull.*, 1913, No. 50, p. 28.

² See fifteen commendatory statements by former pupils quoted in "Vocational Letter No. 7," *U. S. Bureau of Education*, May, 1915.

machinists. The company moreover contracted to furnish the material and purchase the product at established prices. One-half of the price is given to the pupil and the remainder goes toward the maintenance of the school shop, while any deficit is made up by the company itself.

The theoretical instruction is given in high school buildings by a separate staff and the system is administered by a board of industrial education, controlled by the city school board, but upon which the manufacturers have representation. No formal indenture is required, and boys over 14, who have completed the 6th grade, are eligible for entrance.¹

(4) The Textile Industrial Institute of Spartansburg, S. C.

This is a half-time school supported by private contributions and subsidies from cotton mills. School instruction is given in the common branches and practical courses in homemaking subjects. It is designed to train superintendents and overseers for the cotton mills of the South.

(5) The Co-operative System of York, Pennsylvania.

This follows the alternative week plan. Manufacturers in the following trades co-operate with the high school authorities: machine construction, pattern-making, cabinet-making, plumbing, auto-repairing, molding and electrical work. Over \$32,000 was earned by the boys in the first four years of the system. An interesting development in York has been the creation of an auxiliary shop, under the control of the school. It was found that it was necessary to build a separate school shop to insure the students securing all-round training. Thus the co-operative plan in York at least has encountered the same difficulty which spelled ruin for the old apprenticeship system.

¹ See the *First Annual Report of the Trustees of the Industrial School of Beverly, Massachusetts*, 1910, pp. 5-28.

(6) The Co-operative System in New York City.

The introduction of the co-operative system into New York City is the direct result of the labors of Dean Schneider. In 1914 he was employed as an educational expert by the city, and the Board of Education upon his recommendation installed the plan. As in Fitchburg, a preliminary year of high school work is required and unit periods of a week are used. The school work is co-ordinated with the shop experience, mathematics, for instance, being treated from the standpoint of shop problems. 9 high schools and 87 firms co-operated for the year 1916 in taking care of 486 pupils. The weekly earnings of the pupils averaged \$5.78.¹

(7) Other experiments.

Solvay, New York has adopted the co-operative plan in connection with its high school work. The Lewis Institute of Chicago also uses it for some of its students, while the Cincinnati Public School system has established a co-operative course for the training of messenger boys. Centralia township in Illinois has recently put the co-operative plan into practice, while Pittsburg, Pennsylvania, has tried the system in co-operation with various industries and during the last year has worked out an especially close relationship with the department stores of that city.² Little Rock, Arkansas, has recently adopted an interesting variant of the usual co-operative plan in its school for printers. Instead of the usual week and week about system, the Little Rock plan calls for five half days in school each week and six half days in the industry itself.³

¹ "Experiments in Industrial Education in New York City 1916," *National Child Labor Committee Pamphlet*, No. 263, p. 12.

² See Edward Ryneerson, "The Pittsburg Co-operative Plan," *School Review*, September, 1919, pp. 533-44.

³ *Vocational Summary*, September, 1919, p. 95.

3. *Part-Time Continuation Schools.*

In the United States, the part-time continuation school has been a development of the last ten years. How recent has been its growth in this country can be seen from the fact that when Arthur J. Jones in 1907 wrote his monograph on *The Continuation School in the United States*, he did not mention the type of school that we now regard as "the continuation school."

The development of the continuation school principle in the United States may be divided into two periods: (1) The agitational and experimental period prior to the passage of the Smith-Hughes law. (2) The period since the passage of the Smith-Hughes act, marked by its adoption by nearly a score of states.

The real movement for the establishment of part-time continuation schools began in 1910 when Ohio passed the first law definitely referring to continuation schools. More important still, was the tour of the country in the same year by Dr. George Kirchensteiner, the celebrated founder of the Munich system of continuation schools.¹ Dr. Kirchensteiner's influence was increased by the prestige then popularly attached to Germany's "efficiency" methods. Dr. Kirchensteiner very strongly emphasized the fact that the German system of industrial education was not based upon the all-day trade-school, as people had assumed, but instead upon the part-time continuation school. Drawing upon his own experience, Dr. Kirchensteiner pled for the adoption of the system in the United States.

As a result of Dr. Kirchensteiner's visit, the leaders of the movement for industrial education in this country came to understand the real nature of the continuation school and

¹Dr. Kichensteiner's tour was under the auspices of the National Society for the Promotion of Industrial Education.

many of them became enthusiastic advocates of it. From this time on, the continuation school movement gained ground with every year. Prior to the passage of the Smith-Hughes Act in 1917, seven states (Ohio, Wisconsin, New York, New Jersey, Massachusetts, Indiana and Pennsylvania) had made some form of legislative provision for continuation schools and various systems were being put into effect. The laws and developments in each of these states prior to 1917 will now be considered in turn.

(1) Ohio. In 1910 the Ohio legislature passed an act specifying that: "Any board of education *may* require children, between the ages of fifteen and sixteen years who are employed, to attend continuation schools not to exceed eight hours per week between the hours of 8 A. M. and 5 P. M."¹ The act further provided that all minors over fifteen and sixteen who had not completed the sixth grade in required subjects should be required to attend school for a corresponding period of time.²

Since the Ohio Law did not require local boards to establish continuation schools but merely permitted them to do so, and since no state aid was given to those localities which might take advantage of the act, little could be expected from the law. Cincinnati was, in fact, the only Ohio city which installed continuation schools. Even here, however, not all employed children between fifteen and sixteen were required to attend but rather only narrowly restricted classes. In the year 1914-15, the number of pupils enrolled in these continuation schools was only 951.³ This figure included a considerable number of students under the

¹"Digest of State Laws Relating to Public Education," *Bull. United States Bureau of Education*, 1915, No. 47, p. 550.

²*Ibid.*, p. 550.

³86th *Annual Report of the Cincinnati Public Schools* for year ending August 31, 1915, pp. 338-343.

co-operative plan who were not really attendants of part-time continuation schools. The per capita cost of instruction in these continuation schools was as follows:¹

<i>Year</i>	<i>Cost per Student</i>
1909-10	\$12.32
1910-11	20.50
1911-12	8.70
1912-13	9.13
1913-14	9.44
1914-15	7.26

(2) Wisconsin. In 1911, the Wisconsin Legislature passed a series of acts providing that the various local boards of education in localities of over 5,000 population must establish an industrial, commercial, continuation or evening school upon petition of twenty-five persons qualified to attend these schools. Whenever such a school was established for minors between fourteen and sixteen, every such child must attend it for not less than five hours a week for six months in a year and their employers must allow these minors a corresponding reduction in the hours of work. Other features of the act were: (a) the establishment of a liberal system of state aid to such schools; (b) the revision of the apprentice laws so that all apprentices must receive at least five hours of instruction per week; and (c) the creation of a state board of industrial education.²

By a law which went into effect July 1, 1916, the age of compulsory attendance was raised from 16 to 17 years and the number of hours required for school per week was increased from 5 to 8.³ Furthermore, the length of the

¹ This includes the voluntary attendance at these continuation schools, *ibid.*, p. 355.

² *Report Commissioner of Education*, 1911, vol. i, pp. 306-07, also *Bull. No. 2, Wisconsin State Board of Industrial Education*, p. 4.

³ This requirement was not to be imposed for the 16 year old class until September 1, 1918. Till then only four hours a week were required.

school year was increased from six to eight months. In these ways, therefore, the amount of continuation school training required was more than trebled.

The enrollment in the day and evening continuation schools during the year ending June 30th, 1917, was approximately 38,000. Such schools are in operation in all of the 30 cities of the state. The total cost of these schools was about \$700,000 for the year of which the state pays approximately one-half. The average cost per student was \$18 a year.

(3) The New York Law of 1913.

In 1913, the Education Law was amended so that, it *permitted* local boards of education to establish continuation schools

in which instruction shall be given in the trades and in industrial, agricultural, and homemaking subjects and which shall be open to pupils over fourteen years of age who are regularly and lawfully employed during a part of the day in any useful employment or service, which subjects shall be supplementary to the practical work carried on in such employments.²

Should such continuation schools for employed children between fourteen and sixteen be established the local board of education was given the power to require the attendance of any person within this age period. In addition to this

¹ Respective amounts of time required for continuation schools by Wisconsin Acts of 1911 and 1916.

<i>Act</i>	<i>Years</i>		<i>Weeks</i>		<i>Hours per Week</i>		<i>Total number of hours required</i>
1911	2	×	26	×	5	=	260
1916	3	×	35 (app)	×	8	=	840

² U. S. Bureau of Education, 1915, *Bulletin* 47, "State Laws Relating to Public Education," pp. 698-99; *Bulletin University of State of New York*, No. 542, May 1, 1913, pp. 16-17.

every boy between fourteen and sixteen not graduated from elementary schools must take not less than six hours of school work a week for sixteen weeks.

State aid was provided for any continuation school running thirty-six weeks and having one full-time teacher and a minimum of fifteen pupils. This subsidy was to be two-thirds the salary of such a teacher but not to exceed a total of \$1000 per school¹ and in the year 1916-17 these were attended by only 163 children between the ages of 14 and 16!² As we shall see, New York has since passed a compulsory continuation-school law.

(4) New Jersey. The New Jersey Vocational School Law of 1913 gave permission to the various school districts to establish part-time continuation schools. State aid to an amount equal to that raised by the district (exclusive of buildings but not to exceed \$10,000 for any one district) was pledged.³ Despite this subsidy, only one continuation school had been established by 1916 with a total of fifty-seven pupils.⁴ New Jersey has since passed a compulsory continuation-school law.

(5) Massachusetts. Massachusetts was the pioneer state in real industrial education. The celebrated *Report of the Douglas Commission* in 1906 caused the state to provide state aid for vocational education. The dominant ideal at that time however was that of the all-day trade school but the inadequacies which this system displayed soon forced the adoption of other plans as well.

¹ U. S. Bureau of Education, 1915, *Bulletin 47*, *op. cit.*, pp. 698-99.

² *News Letter National Society Promotion Industrial Education*, May, 1917, p. 21.

³ "Digest of State Laws Relating to Public Education," *Bull. U. S. Bureau of Education*, 1915, No. 47, p. 697.

⁴ *News Letter, National Society Promotion Industrial Education*, May, 1917, p. 21.

In 1911, trade extension schools, with voluntary attendance, and open to persons between fourteen and twenty-five, were authorized.¹ An investigation of the general question of part-time education was also authorized and in 1913 the State Board of Education submitted its report recommending the establishment of continuation schools. The Board recommended that all unemployed children between fourteen and sixteen be compelled to attend school and that the local boards of education be empowered to require the attendance of children of these ages at a continuation school for at least four hours a week.² The legislature accordingly enacted that

the school committee of any city or town may, with the approval of the state board of education, require that every child who is over fourteen and under sixteen years of age, and who is regularly employed not less than six hours a day, shall attend at the rate of not less than four hours per week during the time that such school is in actual session.³

This was a permissive-mandatory law in which the legislature declined to make attendance compulsory but permitted local boards of education to do so if they deemed fit.

Boston was the only city to take advantage of this law. In 1915, the first continuation schools were opened in that city and the enrollment for the year 1915-16 was 3,300, employing 39 teachers.⁴

The continuation schools were intended to be of three varieties: (a) those to extend the general education of the

¹ *Acts of 1911*, chapter 471, section 1, paragraph 7, and section 3.

² "Needs and Possibilities of Part-Time Education," a *Report by the Massachusetts Board of Education*, 1913, pp. 21-23.

³ House Bill No. 424, Massachusetts Acts 1913.

⁴ *News Letter*, National Society Promotion Industrial Education 1917, p. 20.

pupil; (b) prevocational continuation schools, to give the employed child practical experience in several trades, furnish information about various industries and assist, through vocational guidance in selecting an occupation; (c) vocational continuation schools; these last were to give actual vocational instruction. This last class in turn was composed of two further varieties, (1) trade preparatory, (2) trade extension schools. The former was to give training in occupations unrelated to those followed by the pupils during the working day. Its aim was to teach skilled trades to those not already engaged in them or to allow pupils to change from present occupations to more congenial ones for which they are better adapted. The Trade Extension School, on the other hand, was to train the pupil in subjects closely connected with the work at which he was employed and give him practical training in the advanced processes of his particular trade.¹

The curricula of these varied types quite naturally differed. All the schools were to give 25% of their time to general training for citizenship, to include courses in civics, personal and industrial hygiene, together with recreation, and cultural subjects. The general improvement school, however, devotes 50% of its time to such subjects as English, arithmetic, geography, and history. These are designed to remove the previous deficiencies of the pupil and add to his general resources. The remaining 25% is to be spent in the discovery and development of the pupil's vocational interests and powers. The pre-vocational school, on the other hand, devotes 50% of its time to shop-work and 25% to vocational guidance, while the vocational continuation schools devotes 75% of its time to actual shop-work and

¹For a more detailed description of these types, see *Bulletin of the Massachusetts Board of Education*, 1915, number 6, whole number 43, pp. 9-10.

related subjects. In 1919, Massachusetts referred the question of compulsory part-time attendance to a referendum vote of all localities where there were more than 200 employed minors from 14 to 16. It is significant that every city voted to require such schools.

(6) Indiana. In 1913 Indiana established a system of state-aided vocational schools and among the types provided for by law was the continuation school. The act authorized the local boards to require all children between fourteen and sixteen years who were regularly employed to attend school not less than five hours a week between the hours of 8 A. M. and 5 P. M.¹ State aid to the extent of two-thirds of the cost of instruction was extended to those schools approved by the state board of education, and a special tax levy of one cent upon every hundred dollars of taxable property was made to provide funds for this purpose.²

The state board of education announced that state aid would be extended only to those schools which gave "instruction in the present wage-earning occupations of the pupils, instruction designed to make them more efficient and productive workmen in that occupation or trade." Schools which aimed to increase the general intelligence of the workers were not to receive assistance. The board declared that though, "it is important to provide a means whereby the workers who have gotten into blind-alley jobs, may be able to fit themselves for more skilled occupations, a school having this for its aim cannot be state aided under the law."³ The part-time continuation schools that have

¹ House Bill No. 101, Indiana Legislature, approved February 23, 1913, section 11.

² *Ibid.*, section 14.

³ "Vocational Education in Indiana," *Bull. No. 6, Vocational No. 4*, Indiana Department of Public Instruction, p. 25.

been established are for apprentices and workers between 14 and 25 years who are engaged in skilled trades. Mr. Book says, "No general continuation work for young people engaged in juvenile or temporary occupations has as yet been organized because this type of education was not state-aided by our law."¹

The narrowness of this system can be readily seen. It does not provide for boys and girls in blind-alley trades and thereby ignores the majority of juvenile labor. Confining its attention, as it does, solely to the occupation at which the young worker is engaged, it does not permit him to prepare himself for other and better occupations. It is extremely doubtful, moreover, whether it permits him to educate himself for more responsible positions in the same industry. The general social purposes are pared to a minimum, only the course of civics being required.

During the year 1915-16, Indiana had thirty-three part-time schools (including co-operative schools) with a total enrollment of 235. Day courses in homemaking for women, which may be called continuation schools, enrolled a total of 1970.

(7) Pennsylvania. In 1913, Pennsylvania provided for the establishment of a system of compulsory continuation schools in connection with a stringent child-labor law. The continuation school law reads, "It shall be unlawful for any person to employ any minor between fourteen and sixteen years of age, unless such minor shall during the period of such employment, attend, for a period, or periods, not less than eight hours each week, a school approved by the state superintendent of public instruction."²

Children employed on farms or in domestic service are

¹W. F. Book, "Vocational Education in Indiana," *Educational Administration and Supervision*, vol. iii, p. 451 (October, 1917).

²Act of General Assembly, No. 177, Laws of Pennsylvania 1915, sec. 3.

not subject to this act, although all other children are. These continuation schools may be conducted in schoolhouses or in factories and stores. They must not be held on either Saturday or Sunday and must be between the hours of 8 A. M. and 5 P. M.

When a school district has fulfilled the regulations of the department of public instruction, such district receives \$200 annually for every teacher having had three or more years of teaching experience, and \$150 for every teacher having had one to three years of experience. The state also pays 50% of the cost of equipment in such a school. The proportions of the school time devoted to various branches are as follows: (a) 40% to academic subjects and general education. This includes English, composition, industrial geography, hygiene, (personal, industrial and social) and civics. (b) 20% to fixed vocational subjects applicable to all industries. This includes industrial mathematics with problems specifically adapted to industrial bookkeeping. Another required subject is shop-sketching and free-hand drawing. (c) 30% to variable vocational subjects. This includes the study of the machines and processes at which the pupil is employed during the day. The local board is given the power of constructing a curriculum of this portion of the time.¹

For the year 1915-16, three hundred and fifty-one continuation schools employed 372 teachers and had a total enrollment of 35,628 pupils, which had increased to approximately 40,000 by June, 1919.

State legislation prior to the Smith-Hughes Act, therefore, was based upon conflicting attitudes on the following two questions: (1) Whether or not the state should require

¹ For a further description of the Pennsylvania system see W. E. Hackett, *Manual Training*, January, 1916, pp. 377-79.

attendance at the continuation schools. Wisconsin and Pennsylvania were the only states where the legislature made attendance compulsory for all. Massachusetts, New York, Ohio and Indiana had permissive mandatory laws by which the legislature empowered the local boards of education to require attendance. Experience was clearly showing, however, that the latter type of law was very ineffective in meeting the situation because of the reluctance of the local boards to impose any additional tax burden. Wisconsin and Pennsylvania, on the other hand, were demonstrating that state-wide compulsory continuation schools backed up by a system of state aid were the only effective means of educating the juvenile worker. (2) Whether or not the curriculum of the continuation schools should be narrowly vocational. As we have seen, the Indiana law permitted education only for the job at which the juvenile worker was employed and did not allow the trade preparation training or social subjects in the curriculum. Pennsylvania and Massachusetts, on the other hand, permitted a more diversified form of education and included civic and social subjects as well as the more strictly vocational.

The Smith-Hughes Act of 1917 greatly accelerated the movement for continuation schools. The act provided that at least one-third of the money apportioned to the respective state for teachers of home economics, trade and industrial subjects *must* be spent in part-time schools or classes and furthermore that the subjects taught must increase the civic or vocational intelligence of employed persons over fourteen years.¹

As a result, seventeen additional states passed compulsory continuation school laws in 1918, so that there are now nineteen such states. The following table summarizes the chief provisions of these laws:

¹ Section II of the Act.

PROVISIONS OF PART-TIME COMPULSORY EDUCATION LAWS¹

<i>States</i>	<i>Minimum number of minors required to estab- lish classes</i>	<i>Ages of required attend- ance</i>	<i>Hours per week required attend- ance</i>	<i>Length of School Year</i>	<i>Law in Effect</i>
Arizona	15	14-16	5	150 hours.....	1919
California	12 ³	14-18	4	Same as public schools.	1920
Illinois	20	14-18	8	Same as public schools.	1921
Iowa	15	14-16	8	Same as public schools.	1919
Massachusetts..	200	14-16	4	Same as public schools.	1920
Michigan	50	14-18	8	Same as public schools.	1920
Missouri	25	14-16	4	Same as public schools.	1919
Montana	15	14-18	4	Same as public schools	1919
Nebraska	15	14-16	8	144 hours.....	1919
Nevada	15	14-18	4	Same as public schools.	1919
New Jersey	20	14-16	6	36 weeks.....	1920
New Mexico	15	14-16	5	150 hours.....	1919
New York	20 ³	14-18	4-8	Same as public schools.	1919
Oklahoma	20	16-18	..	144 hours.....	1919
Oregon	15 ³	14-18	5	Same as public schools.	1919
Pennsylvania ...	50	14-16	8	Same as public schools.	1913
Utah	15	14-18	4	144 hours.....	1919
Washington....	15 ⁴	14-18	4	Same as public schools.	1920
Wisconsin ⁵	14-17	8	8 months.....	1911

It will be noticed from the above table that ten states require attendance until eighteen, one to seventeen and seven to sixteen years of age. The minimum age at which part-time education begins is almost universally fourteen save in Oklahoma where it is sixteen due to the fact that com-

¹ Taken from *Third Annual Report, Federal Board for Vocational Education*, December, 1919, p. 21, and paper delivered by L. H. Carris before *National Society for Vocational Education*, February 21, 1920. Mr. Carris' paper gives an admirable summary of this legislation.

² Establishment required only in cities of over 5,000 population.

³ Attendance upon evening school may be substituted.

⁴ Districts may organize schools upon written request of 25 residents.

⁵ High school districts having 50 or more pupils must establish part-time classes.

pulsory full-time education is required there until sixteen. Nine of the states require two years of this part-time education, one requires three years, and nine require four years.

The number of hours of part-time education required per year also varies. The Smith-Hughes Act requires that at least 144 hours be given before the school may receive federal aid and all states provide at least this amount. On the basis of weekly attendance, seven states require four hours, two require five hours, one requires six hours, six require eight hours and one has a minimum requirement of four hours with a maximum of eight. Twelve states require as many weeks for the part-time schools as for the other public schools. One specifies that thirty-six weeks should be required; another, eight months and still others do not specify the number of weeks but fix a yearly minimum length. Taken all in all, the minimum of 144 hours a year is exceeded by at least seven states, most notably by Wisconsin, Illinois, Pennsylvania and New Jersey.

It will be noticed that the laws provide a minimum number of minors necessary to form a class ranging from 12 in California to 200 in Massachusetts. In all but four states, however, not more than 20 are required. Some limitation seems to be necessary from an administrative standpoint; but care should be taken lest the minimum be placed too high, thus preventing children in small towns and localities from receiving such training.

The state laws almost universally require the schools to be held during the minors' working hours and usually state that they must be held between the hours of 8 A. M. and 5 or 6 P. M. The hours spent in the part-time school are to be deducted from the maximum number of hours which the state law permits the minor to work. For instance, if children are allowed to work 48 hours per week and are required to attend a part-time school for 4 hours, the number

of hours which a minor can legally work is thereby lowered to 44. Only one state, Oregon, permits the attendance at an evening school as a substitute for attendance at a part-time school.

Most of the acts have been passed so recently, many having not yet gone into effect, that it is difficult to pass judgment upon their effectiveness. The whole movement, however, is a most significant step in the abolition of the hitherto abrupt break between school and industry and in extending partial educational control over the child for an additional period of time. It is probably only a question of time before the other states will enact compulsory part-time laws as well and the example of Wisconsin and Pennsylvania rather than the permissive-mandatory laws will furnish the model for future legislation.

Both the part-time continuation school and the co-operative school possess certain obvious advantages over the all-day trade school and the corporation school. Unlike the former they can take both those under sixteen and those who are poor and give them an education which admirably combines theory and practice, and do all this at a lower cost per pupil. Unlike the latter, they can apply to small plants, their teaching will be less biased and their continuation will not be dependent upon their pecuniary profitableness to the individual employer. These statements should not be understood to mean that the trade school and the corporation school have no place. Far from it. They have a real place but it is a supplementary one. They cannot become the chief element in the system of industrial education.

While it may have been doubtful a few years ago as to whether the part-time continuation school or the co-operative school would become the dominant form of school, this issue has been settled by the part-time laws passed within the last two years. It is the continuation school that will be-

come the corner stone for the American system of industrial education as it has been for that of Germany and, under the Fisher Act, has become for that of England. The chief reason for the adoption of the part-time school plan in preference to the co-operative school was perhaps its greater adaptability for the purpose of compulsory attendance. It was seen that voluntary attendance for further training would not be sufficient to cope with the problem. Compulsion was necessary. It would be impossible, however, to compel attendance at school for half of the time of the employed boy. Such a universal requirement would disrupt every employer's business, cut the child's wages in half and impose a crushing burden of expense upon the state. Part-time education of from four to eight hours a week is less costly and disconcerting to all parties.

The part-time continuation school, however, has at least two further advantages which are less frequently considered: (1) There is much less danger than under the co-operative plan of overcrowding any particular trade with workers. Under the co-operative system, two sets of learners alternately occupy the same place in industry. Should the co-operative plan be adopted completely in any one locality, there would be danger that a double labor force would be trained which could not be assimilated upon graduation. (2) More than any other plan, the continuation school gives a greater opportunity for the abler members of the lower economic classes to rise in industry.

This may perhaps be illustrated as follows. Let us represent the present industrial system as a multiple-storied house, the first floor of which is composed of the unskilled jobs, the second story of the semi-skilled positions, the third of the skilled jobs, the fourth of the high grade clerical work and the upper floor of the engineering and managerial positions. How do the present occupants of these various floors

attain their positions? Obviously anyone can walk in on the ground floor and enter the ranks of the unskilled workers. But how can one reach the upper floors? It depends upon the system of industrial education. If the trade or the co-operative school is the predominant method, entrance to these floors is only from outside of the house, not from the inside. There would be some passage between the unskilled and semi-skilled and the skilled, but it would on the whole, be slight, especially between the latter two classes. Once a juvenile entered the ground floor and joined the ranks of the unskilled laborers, he must largely abandon hope of climbing to the upper floors. The only way to reach them would be by climbing the staircase outside of the building (the trade or co-operative school) which would open at the various floors and then admit him. But should he try this, he would be outside the building and to climb up the stairway would take several years. Since he was outside, he would not be in the industry and consequently, he would not be earning. Since he could not support himself while he was climbing the staircase, he would be forced to stay inside and continue working on the ground floor at unskilled labor.

Who then would reach the upper floors? Those whose parents could afford to support them while they were learning and climbing the stair case. These children could reach the two upper floors and join the skilled laborers and brain workers without ever having entered the lower floors at all. Thus, each group of workers would be recruited from a particular class and those in the lower floors could not rise to the upper. Such a system of industrial education, to carry our analogy one stage further, would be like a house with no inside but only outside stairways. This was the German system of education and inevitably produced there what it will produce everywhere, namely, class stratification. It does not give equality of economic opportunity.

The continuation school supplies those inside stairways that are lacking under a trade or co-operative school system of industrial education. It enables men to earn while learning and hence makes it possible for them to rise from the bottom and helps to break down class stratification. The continuation school seems thus to be the best single system of industrial education that there is. The trade school, the corporation school, and the co-operative school can all find places in which they may function efficiently, but they should be auxiliary and subordinate to the continuation school.

CHAPTER XII

VOCATIONAL GUIDANCE

VOCATIONAL guidance aims to direct the child into those occupations in which he can find the greatest efficiency and happiness. Upon leaving school, children now generally take the first job that turns up without stopping to inquire whether it is a position that has future promise or is one for which they are adapted. Says the Federal Investigation into the Conditions of Women and Child Wage-Earners:

There is much to indicate . . . that the opportunities and advantages were alike unknown to them (the children). Nothing seemed to suggest to a child the desirability of learning a trade or entering an industry in which he would have a chance of rising so he took the first thing that came to hand.¹

Since the child rarely knows the nature of the industry he enters and practically never knows his own capacities, an enormous amount of economic and social maladjustment follows. One index of this is the rate at which juvenile workers change their positions, which has already been indicated in Chapter IV. The vast multitude of men and women working at distasteful jobs for which they are not adapted forms one of the great modern wastes of human energy as well as one of the chief sources of unhappiness and baulked human impulses.

The vocational guidance movement seeks to lessen this maladjustment. Such a movement could never have arisen

¹ *Report on Conditions of Women and Child Labor*, Senate Doc. 645, 61st Congress, 2nd Session, vol. vii, p. 186.

in the days of handicraft: it is a product of the complexity of modern industry. In the small village preceding the Industrial Revolution a boy had only to make his choice between a few trades, each of which was a whole. He walked by these shops almost daily and knew the master workmen quite intimately. He secured most of his knowledge at first hand while his father would supplement his information.¹ Then the choice of a vocation was the result of years of observation and was based upon an intimate knowledge of the situation. The enormous multiplication of trades, the ever-increasing division of labor, together with the widening of the area in which a workman can sell his labor, have destroyed all possibility of either the modern child or his father knowing what occupations are best suited for him. Vocational guidance aims to create a definite organization which will perform a function previously carried on by the family.

I. STAGES IN THE DEVELOPMENT OF VOCATIONAL GUIDANCE

Formal vocational guidance in America is a product of only the last fifteen years. It began almost contemporaneously in New York and Boston,² but the main stream of influence has spread from Boston. Professor Frank Parsons of Boston University, a prolific writer upon social questions, became interested in the problem, and began talking with children who were either at work or who were about to begin. His activity ripened very naturally into the establishment of a vocational bureau attached to the Civic Service House of Boston. To this Bureau, Professor Parsons gave his last years before his death in 1908.³ His

¹ See Franklin's *Autobiography*.

² A. H. Leake, *Industrial Education*, p. 155, states that organizations for vocational guidance had their inception in New York.

³ Prof. Parsons' book, *Choosing a Vocation*, was published posthumously in 1909.

work was taken up and carried on by Mr. Meyer Bloomfield, who for some years was the most prominent and active worker in the movement.

1. *The Guidance of the Individual child.* Professor Parsons began by personally advising a few boys and girls. Flesh and blood children were asking for advice, and the advice had to be adapted to their particular needs. Parsons and his followers found that to do this effectively, they must investigate the child's past record and form a first-hand opinion of his capacities. Once the child was at work, the advisor or "counsellor" followed him up and found out how the child was progressing and why. The entire basis was one of friendship between counsellor and child, and was more amiable than scientific. In this stage, the counsellors were largely volunteers, and anyone capable of teaching a settlement class was considered capable of serving as a vocational adviser.

Vocational guidance in most places has today not proceeded beyond this primary stage. It concerns itself largely with individual cases and does not treat the problem *en masse*. In some cities, however, a second stage has been reached.

2. *The Treatment of Vocational Guidance as a Community Problem.* As vocational guidance progresses in a community, more and more children come to be affected by it. This increase may be due either to their voluntary request for counsel, or to the institution of counsellors in the public schools who are to guide students about to enter industry. The problem now becomes not merely how to place Johnnie or Susie in a good job, but how to take care of a hundred or a thousand boys and girls. The large numbers compel those in charge of vocational guidance to find out just how many children are wanted in the various

industries and what are the advantages of each. From the collected trade experience of children who have been advised, a body of data is gradually built up.

The most prominent feature of this stage is the municipal survey. This is designed to cover some or all of the chief industries of the city to determine just what vocational opportunities they offer. These surveys are conducted by various bodies; sometimes by unofficial local societies, sometimes by organizations such as the Russell Sage Foundation, or the National Society for the Promotion of Industrial Education, and sometimes by municipal and state agencies. Often they are part of a general survey of the educational conditions of the locality.

Some forty surveys of varying degrees of elaborateness, which have been made during the last five years, have come to the author's knowledge.¹ Undoubtedly the most important of these are the Richmond Survey of 1915, the Minneapolis Survey of 1916 and the studies of Evansville, Indianapolis, and Richmond, Indiana, of 1917. The last three were coöperated in by the National Society for the Promotion of Industrial Education. These investigations laid a basis of facts upon which counsellors and educators could build their policy. In this respect the second stage is really the beginning of scientific vocational guidance.

3. *Vocational Guidance as a Shop Policy.* Within the last few years, the discovery of the amount of labor turn-

¹ Boston, Somerville, Holyoke, Waltham and Worchester, Mass.; Bridgeport and Hartford, Conn.; Buffalo, N. Y. City, Poughkeepsie, Rochester, Syracuse and Troy, N. Y.; Jersey City, N. J.; Duquesne, Ia.; Pittsburgh, Philadelphia, Scranton and Wilkesbarre, Pa.; Richmond, Va.; Louisville, Ky.; Winston-Salem, N. C.; Little Rock, Ark.; New Orleans, La.; Cincinnati, Cleveland, and Dayton, Ohio; Indianapolis, Richmond, Evansville, Terre Haute and Hammond, Ind.; Chicago, Peoria and Springfield, Ill.; Grand Rapids, Mich.; Duluth and Minneapolis, Minn.; Topeka, Kan.; Sioux City, Iowa; Oakland, Calif.; Portland, Ore.; Seattle, Wash.

over, absenteeism and withheld effort, has caused hundreds of plants to create functionalized employment departments. These departments have taken hiring away from the shop foremen and have centralized it. The best conducted have tried to test the ability of the applicants for work, to place them in the proper positions, to follow them up in order to see whether they are succeeding and to adjust any difficulties that may arise. This constitutes the third stage of vocational guidance.

II. THE METHODS OF VOCATIONAL GUIDANCE

As vocational guidance has increased in importance, its methods have naturally become more scientific. Both the children and industry itself demand accurate investigation. The following discussion considers the attempts made by vocational guidance to determine for what positions children are fitted and what positions are best fitted for children.

1. Determination of the Positions for which the Child is Best Fitted. The following principles have been advanced as methods whereby the capacities of the child can be ascertained.

A. Determination upon the basis of the child's interests. This theory runs somewhat as follows: "If a child is interested in an occupation, he will work hard at it and ultimately master it. The task then is simply to guide his interests. This can be done by letting him know about various industries, and by stimulating him to think about his future vocation."

This is evidently a *laissez-faire* theory of vocational guidance and is a part of the modern movement in which John Dewey and Madame Montessori, have been leaders. This doctrine of interest should be examined from several standpoints, however, before it is accepted. (1) *Is interest a real index to ability?* Thorndike, after an investigation

of 100 college students, concluded that if a person is interested in a subject, he generally has ability in it.¹ This apparently conclusive study should not, however, be regarded as settling the matter at issue. The students' interests which were measured were in subjects that they had studied or were then studying. The students knew from first-hand contact whether or not they liked a given subject. Plainly this does not apply to the children about to choose a vocation. Their interest is based on desire, with little or no contact with the facts. Being prospective, not retrospective, it is clearly no index of their ability in the given industry.

(2) *Is the interest of a child permanent or temporary?* If it is permanent, the child can perhaps be allowed to make its choice. If temporary, grave dangers immediately arise.

Thorndike, in the study already mentioned, states that, "these facts unanimously witness to the importance of early interests. They are shown to be far from fickle and evanescent. On the contrary, the order of interests of twenty shows six-tenths of perfect resemblance to the order from 11 to 14, and has changed little more than the order of abilities has changed."²

This study is open to the immediate criticism that the statistics for the earlier years were based upon memory which is an untrustworthy source, since one is apt to underestimate changes and to overestimate permanence. But even if we should waive this criticism, the study would not prove that interests are permanent in the industrial field. Thorndike was measuring interest in school subjects which are broader classifications than specific jobs. The curriculum can at most be divided into only a score of general

¹ E. L. Thorndike, "The Permanence of Interests and their Relation to Abilities," *Popular Science Monthly*, vol. 81, pp. 449-456 (Nov., 1912)

² Thorndike, *op. cit.*, p. 455.

subjects, while industry has thousands of occupations. A boy may have a permanent interest in economics, yet that interest may lead him equally well into law, business, rail-roading, banking, teaching or politics. In the same way a boy might have a permanent interest in "factory work." Does that determine what particular industry he will enter? Moreover, does it determine the particular occupation he will assume in any one industry? The fact that "general" interests are permanent, may narrow the field, but it does not settle the choice. A child's preference for a concrete position, such as that of civil engineer or carpenter, is not necessarily permanent. There is indeed a very strong presumption that the interest of children in specific positions is anything but permanent. It is likely to change because the child himself is in the very process of change.

(3) *Will the children be able to indulge their interests in industry as it is?* Children are naturally interested in picturesque and striking occupations, but unfortunately there are only a few such. They are not interested in the routine tasks, but industry is chiefly composed of these. Most children desire positions which, in the nature of things, only a few of them can attain. The tendency of children to choose occupations which are impossible for all, save a small percentage finally to engage in, is shown by the following studies. Zeidler, in his investigation in the schools of Santa Clara County California, found that 122 boys out of 293 wanted to enter one of the five following occupations: machinist, mechanic, engineer, aviator and electrician, while only two of their fathers were so engaged.¹ Close study of over 1000 boys in Oakland, California, disclosed that 56.4% of them wanted to be one of

¹ Richard Zeidler, "Occupations of Fathers and Occupational Choices of Boys in Twenty-two Rural and Village Schools in Santa Clara County, California," *Manual Training*, May, 1916, pp. 674-80.

the following: engineer, lawyer, mechanic, farmer, architect, electrician, doctor, book-keeper and chef, yet only 12.4% of the parents of these boys were employed at these occupations.¹ Wood's study of 990 boys in St. Paul, Minn., lends further confirmation. 28% of the boys wanted to go into the professions, while only 5% of the parents were professional men. 14% of the boys wanted clerical jobs although only 6% of the parents were so employed.²

Conversely, those occupations where most of the fathers are employed, are those towards which the boys manifest the least interest. Zeidler's study showed that fifty-three fathers were either laborers, contractors, ministers, painters, or fruit packers, yet only three sons want to enter any of these occupations.³ Sears' study showed that while 30% of the parents were engaged in the manufacturing trades, only 7% of the boys wished to enter them and that although 32% of the fathers were in business, but 14% of the sons wanted to enter this field.⁴ The St. Paul investigation showed that whereas the trades employed 33% of the fathers, only 14% of the boys had chosen it, and that while 10% of the fathers were unskilled laborers, only 1% of the boys wanted to go into this class of occupation.⁵

Interest therefore seems to be insufficient as a sole method of vocational guidance. The truth is probably that while no child should preferably go into an industry unless he is interested in it, it is also true that he should not

¹T. B. Sears, "Occupations of Fathers and Occupational Choices of 1039 Boys in Grades Seven and Eight of the Oakland Schools," *School and Society*, vol. i, pp. 750-56.

²Ervile B. Woods, "The Social Waste of Unguided Personal Ability," *American Journal of Sociology*, vol. xix, p. 365 (Nov., 1913).

³Zeidler, *op. cit.*

⁴Sears, *op. cit.*, pp. 750-56.

⁵Woods, *op. cit.*, p. 365.

enter it just because he is interested. Advocates of vocational guidance must furthermore face a truth that they have hitherto found it more pleasant to ignore: namely, that a large part of the world's work is so dispiriting and dull that, were interest depended on, these positions would never be filled. They are filled at present, not by choice, but by economic pressure. Vocational guidance in itself will be insufficient to drain children off from these pursuits. Somehow they will still have to be recruited.

B. Determination by Self Analysis. Few would advocate this as the sole method of vocational guidance, but it has its place as a part of the system. It is really an inventory of the individual's assets and liabilities. Parsons, indeed, made self-analysis the basis of his method, and required those who came to him for guidance to make a written analysis of themselves by following an outline that he had prepared. This outline was exceedingly elaborate, containing over four hundred questions.¹ Obviously it would require a capacity for patient accurate introspection that few adults and practically no juveniles possess. Hollingworth has found that the individual tends to overestimate himself upon desirable traits and under-estimate his possession of undesirable ones.² Furthermore, such abstract qualities as energy, honesty, truthfulness, industry, *etc.*, that Parsons tried to evaluate, are prerequisites for all industries, nay for life itself; they do not determine which of a number of industries one should enter.

C. Determination by the Impartial Judgment of Others. Men are hired by others, they are not employed merely because they want to work at a particular job. Employers

¹ Frank Parsons, *Choosing a Vocation*, pp. 26-44.

² H. L. Hollingworth, *Vocational Psychology*, pp. 151-155.

have used the most diverse methods of selecting men. Most of them say that they use their "knowledge of human nature" to make proper choices. Few could tell what they mean by "human nature." It generally means that they employ those that make a good impression on them. Terman, in a San Diego examination, found that many candidates having a good personal appearance, were of a low degree of intelligence.¹ A good or bad impression may be and often is caused by details that have no real connection with the applicants' power of filling the position satisfactorily. A sallow skin, a retreating forehead, and close-set eyes, are traits that the vast majority of business men would stamp as undesirable, yet there is not one iota of proof to indicate that they are any index of a man's true worth. Phrenology has long since been exploded by scientists, but many so-called "practical" men still cling to it.² Nor is the ability or inability to impress an employer by short conversations, general dress, and bearing, an index of ability. The methods of employment have all too frequently been, in the past, a mixture of guess-work and false science.

One very distinct fault with this method of employment has been that judgment has been passed by one man only. Individual judgments are notoriously open to error. Group judgments are much more reliable.³ In the personal examination, undoubtedly a better selection of men would be obtained if several persons passed judgment on the men and rated them as regards certain concrete characteristics. From these individual judgments, a composite rating could

¹ L. H. Terman, "A Trial of Mental and Pedagogical Tests in a Civil Service Examination for Policemen and Firemen," *Journal of Applied Psychology*, vol. i, pp. 17-19 (March, 1917).

² *E. g.*, the wide attention that is being paid by business men to Dr. Katherine Blackford's methods of analyzing character.

³ See Hollingworth, *op. cit.*, pp. 133-142.

be made which would tend to eliminate many individual errors. Exactly such a system was worked out for the rating of officers during the war by the committee on classification and personnel of the War Department.

D. Determination by Means of Psychological and Trade Tests. Individual judgments are faulty and take the time of high-salaried officials. Group judgments are expensive. How much easier it apparently is to turn over the applicant to a psychological laboratory and ask for a quantitative measurement of his qualities! The tests do not take long and there is a numerical precision about the results that is highly impressive. The question is: are these tests an index of ability? If so, how far?

A variety of tests has been used. They may be divided into two main groups, (1) general intelligence tests, and (2) specific abilities tests. Typical of the first group are the revised Benet-Simon tests, the Terman, Thorndike, Woodworth and Wells tests and the army general intelligence tests.¹ These intelligence tests have developed far beyond the crude forms of the original Benet-Simon test so that not only can the definitely feeble-minded be identified but all others can be classified into various groups. The general intelligence of a fairly large sample is shown to conform to the normal probability curve. A firm desirous of hiring high-grade men will find its choice greatly assisted by the use of these tests.² Positions may also be classified into groups according to the amount of intelligence required of those who work at them. Then men with grade A intelligence, can be employed at grade A jobs, those of grade B

¹ See Terman, *The Measurement of General Intelligence*; Yoakum and Yerkes, *Army Mental Tests*.

² See W. D. Scott, "The Selection of Employees by means of Quantitative Determinations," *Annals, American Academy Political and Social Science*, May, 1916, pp. 182-193.

at grade B positions and the men of the lowest intelligence at the least skilled jobs. Care should be taken, however, that the classification be not made minute and not more than four or five groups should be separated at first. While this method is applicable among groups, it does not afford a basis for apportioning positions within any one of these groups.

The question may then be asked: does experimental psychology afford a means for determining the specific capacity for specific occupations? Certain tests such as those for color-blindness, for such occupations as engineers, motormen and flagmen, can be given and the defectives weeded out. The discovery of specific aptitudes, however, is much more difficult. Applicants for switch-board work can be tested for auditory acuity, and, if below standard, refused employment, while Seashore has developed tests to test natural singing ability.¹

Hollingworth classifies the methods of testing specific abilities as follows:² (1) By use of the vocational miniature. An example of this is testing "hello" girls on a toy switch-board. Hollingworth and Muensterberg both believed that this was not a fair test. What is essential to the test is not the similarity of external mechanism, but the internal similarity of the mental attitude. (2) By sampling. This is the taking of an actual part of the work that must be performed in a specific job and trying the candidate out on it. As Hollingworth points out, this is not essentially psychological. Furthermore, to make it a fair test, a large number of samples must be chosen. No judgment can be

¹ See G. M. Whipple, "The Use of Mental Tests in Vocational Guidance," *Annals, American Academy*, May, 1916, pp. 193-204.

² H. L. Hollingworth, "Specialized Vocational Tests and Methods," *School and Society*, vol. i, pp. 918-922 (June 26, 1915); also chapter v of his *Vocational Psychology*.

given as the result of a trial upon one piece of work. (3) By analogy. This is the testing of the subject under certain situations that are supposed to be analogous to those which the worker will face in a given job. Under this head come: (a) Muensterberg's famous test for sea-captains by the quickness and accuracy shown in rating cards, (b) his test for motormen by the use of a crank in connection with a strip of paper, and (c) the test for telephone girls by canceling letters from a newspaper page. The great difficulty here is in getting tests which are really analogous to the situation which confronts the worker in the specific industry. Breese, of Cincinnati, applied Muensterberg's test for sea-captains and his result showed that according to the tests, women should make the best marine officers. It may be that it is so, but the more probable supposition is that the test was not a real measurement of all the qualities needed. (4) By miscellaneous empirical tests. This method consists in starting out with no one *a priori* test, but using a number of tests and then correlating them with the later progress of those tested in the industry itself. The tests which actually are an index of ability can thus be secured and those that are not, can be discarded. This method has been adopted by Mrs. Helen T. Woolley in her investigations in Cincinnati. Through the coöperation of the Board of Education and the Schmidlapp Bureau, Mrs. Woolley and her staff of investigators are placed in charge of the issuance and reissuance of working permits. The children are given mental and physical tests on their going to work and their later industrial history is checked up. The results will determine what correlation exists between the various tests and industrial success or failure, *etc.* The work has probably not been in operation sufficiently long to permit complete correlation, but preliminary studies have been

made.¹ It is this last method, which has been followed by Lough in the testing of typists is beginning to be used in trade tests by such men as Dr. Link, and which seems to promise most. Positive correlations will be worked out, it is to be hoped, which will establish the adequacy of some tests and the inadequacy of others.

A word of caution is perhaps needed concerning the present development of psychological tests as a method of determining vocational bent. General intelligence can perhaps be roughly determined, but only slight headway has been made in the determination of specific aptitudes. Experimental psychology gives some promise that in the future it will be able to do this, but it has little concrete accomplishment. The claims of the vigorous advertisers of psychological tests, both within and without college ranks, should be most carefully scanned, for their boasts are beyond their deeds.

E. By Testing the Worker Out on Actual Jobs. This theory is based on the belief that it is impossible to determine in advance for what a child is best fitted. If psychological tests, and interest and character analyses are inadequate, what can be done? Plainly, try the child out in some position and see what success he has. If he fails at it, his failure should be studied and he should be guided into other positions in the light of the characteristics that he has displayed. If he succeeds, the characteristics that he shows may aid in determining whether he should be guided into a better job, or continued for a term in his original position.

¹ See Helen T. Woolley and Charlotte R. Fischer, *Mental and Physical Measurements of Working Children*, vol. xviii of Psychological Monographs; Helen T. Woolley, "Charting Childhood in Cincinnati," *The Survey*, vol. xxx, pp. 601-606 (Aug. 9, 1913) also "The Issuing of Working Permits and its Bearing on other Educational Problems," *School and Society*, vol. i, pp. 726-733.

This is not the old hit-or-miss method of letting the child find out for himself for what he is best fitted. In this plan, the child is supervised and followed up and not left to shift for himself.

F. Conclusion. While no one of these methods is sufficient in itself, none of them is inconsistent with any other. It is not a question of choosing between one of these methods and the rest. They are not substitutes for one another, but are complements.

A boy may be psychologically adapted for a position, but if he is not interested in it he will prove to be an inefficient worker. He may be both interested and pass a high psychological test, yet be dishonest and untruthful and, therefore, incompetent. He may have a high moral record, be keenly interested in the position and pass the psychological censor, and still make a dismal failure on the actual job itself. Human capacities are too complex to be evaluated by a single scale of measurement.

Probably a combination of nearly all of these methods should be used. A child's interest in the general field of occupations should be stimulated in a critical manner. He should be encouraged to analyze his own capacities and find out his strong and weak points. Psychological tests can separate people into rough groups as respects their general intelligence, and if positions be classified correspondingly the field of choice can be limited. It may well be that future developments will enable the psychologists to assign individuals to specific tasks, but their science does not permit them legitimately to claim the power to do so now. Finally, since man is essentially changing and his personality is not fixed, the record on the job should be carefully watched. If he improves, he should be promoted. If he does poorly, the causes of his failure should be noted and

he should be assigned to work at which he can be more efficient.

III. DETERMINING WHAT JOBS ARE FITTED FOR CHILDREN

It is not only necessary to examine children in order to determine what they are fitted for, but it is equally necessary to examine industry to determine whether children should be allowed to enter it. A child should be as careful in choosing an industry, as an employer is in choosing the child. An analysis of industry is therefore a necessary part in any democratic system of vocational guidance.

A. Investigations already made. Many such investigations have already been made in this country. Not only have the city surveys conducted by the National Society for the Promotion of Industrial Education accumulated a mass of material concerning specific trades but many surveys have been made of individual industries as well. A list of the more important of these studies is given below¹ as well

¹See the Richmond Survey, *Bulletin 162, U. S. Bureau of Labor Statistics*; The Minneapolis Survey, published both by the *National Society for the Promotion of Industrial Education as Bulletin 21* and by the *U. S. Bureau of Labor Statistics as Bulletin 199*. The Richmond, Indiana, the Evansville and the Indianapolis Surveys are published as *Bulletins 18, 19 and 21 respectively, of the Indiana State Board of Education*. See also *Survey of Printing Trades of Cincinnati*, by the Cincinnati Chamber of Commerce; R. J. Leonard, *Some Facts concerning the People, Industries, and Schools of Hammond, Indiana*, 165 pp. (1915); Anne Davis, *Occupations and Industries open to Children Between Fourteen and Sixteen Years of Age*, published by the Chicago Board of Education, 1914; Arthur D. Dean, *Education of Workers in the Shoe Industry*; Frederick J. Allen, *The Shoe Industry as a Vocation*. See also the following volumes on industrial conditions in Cleveland, Ohio, published by the Russell Sage Foundation, F. L. Shaw, *The Building Trades*; R. R. Lutz, *The Metal Trades*; Bertha M. Stevens, *Boys and Girls in Commercial Work*; R. R. Lutz, *Wage Earning and Education*.

as a list of the investigations made particularly for women.¹ These studies however are for the shelves of the research student or for the vocational adviser and not for the children who are to be guided; the children need shorter and more popular pamphlets, similar to those issued by the Boston Vocational Bureau on a number of trades.

B. Type of investigations needed. Unquestionably the great need is now for a series of short, accurate and terse descriptions of the various industries which will give the child a clear comprehension of the economic, hygienic, educational, and social prospects of each industry.²

The economic aspects should include: (1) The size of the industry,—number of plants and employees. (2) Whether it is localized or diffused. (3) Is it growing or decreasing and at what rate? (4) Is it overcrowded or is there a scarcity of high-class workmen? (5) What are the hours of work? (6) What are the wages for the various kinds of work? (7) How computed? Time or piece work? (8) How much unemployment is there?—seasonal fluctuations, casual employment, etc.?

¹ See Lorinda Perry, *Millinery as a Trade for Women*; Mary Van Kleeck, *A Seasonal Industry—A Study of the Millinery Industry in New York City*; Van Kleeck, *Women in the Bookbinding Trade*; Van Kleeck, *Artificial Flower Makers*; May Allinson, *Dress Making as a Trade for Women in Massachusetts*, *Bulletin* 193, U. S. Bureau of Labor Statistics; *Fourth Annual Report of New York State Factory Investigating Commission*, vol. iv., containing studies by R. J. Leonard, *An Investigation of the Paper Box Industry to Determine the Possibility of Vocational Training*, pp. 1243-1347, and by Anna C. Phillips, *An Investigation of the Candy Industry, etc.*, pp. 1363-1406; I. P. O'Leary, *Department Store Occupations*; Edna Bryner, *The Garment Trades*; Edna Bryner, *Dress Making and Millinery*; Alliance Employment Bureau, *Inquiry into Trades for Factory Workers*; Women's Educational and Industrial Union, *The Public Schools and Women in Office-Service*.

² See as a model the admirable handbooks of the London Apprenticeship and Skilled Employment Association, *Trades for London Boys and How to Enter Them* (1912); *Trades for London Girls and How to Enter Them* (1914).

The description of the hygienic and safety conditions should include: (1) What is the death rate for that trade? The morbidity rate? How do these compare with other trades? (2) What particular dangers are there in the industry? (3) Accident rate; what percentage are fatal; what per cent serious; what are slight? If no accurate figures can be obtained, a general estimate of the dangers could be given. (4) Is the work out of doors or indoors? (5) Does the worker sit, stand, or move about? (6) Degree of eye-strain? (7) What rest-periods are allowed. How long is the noon hour, *etc.* (8) Conditions of ventilation and temperature; hot, cold, medium, variable or constant, degree of moisture, circulation. (9) Nervous strain and fatigue. This involves a statement of the speed required of the worker and how specialized and repetitious are the tasks. (10) Is the industry noisy? Disagreeable odors? Is the industry stimulating or enervating?

The survey of the educational possibilities of the industry should cover: (1) How great is the division of labor? (2) Relative proportion of skilled, low-skilled, and unskilled labor? (3) Are new processes being invented? If so, what is their influence upon the division of labor and the amount of skilled labor required? (4) Are untrained beginners wanted in the trade? (5) What is the average age of entrance to the trade? (6) What age is preferable? (7) Wages at entrance? Do they increase? If so, how much and how rapidly? (8) Is there opportunity to learn more than one branch of work? (9) Is there a possibility of changing from one department to another? (10) What are the possibilities for promotion? (11) What kinds of skill are required in the different occupations within the industry? (*i. e.*, how much general knowledge, industrial and economic intelligence, specialized technical knowledge, manipulative skill?).

To answer these questions, some detailed job analysis is needed. The various surveys have accumulated a mass of information which can be adapted and supplemented to meet local conditions. The job analyses which the United States Bureau of Labor Statistics prepared for the Federal Employment Service for some twenty industries give information on many of these topics.

The social questions which should be asked of an industry are every whit as important, though very often neglected. Especially important to consider are: (1) The moral dangers of the industry, exposure of messenger and news boys, waitresses, sales-girls, theatre ushers, *etc.* (2) Racial composition of the trade; what races chiefly predominate in the particular industry? (3) What is the attitude of employers toward unionism; whether sympathetic, unconcerned, or antagonistic? (4) Degree of unionism existing; name of unions and headquarters, importance of the unions. (5) Policies of the unions. This should cover a brief statement of the policy towards entrance to a trade, whether it is "closed" by means of apprenticeship rules or high initiation fee, or "open" to all workers; policy of union as respects industrial or craft organization, collective bargaining, *etc.*

Not only should the industry be investigated, but local vocational authorities should gather information about individual employers. The possibility of promotion, working conditions in the particular plant, whether welfare work exists and if so, whether it is a substitute for an increase in wages, *etc.*, might well be studied and recorded. Particularly bad employers might indeed be placed upon a "black list," or good employers upon a "white list."

Such a thorough investigation of industry would give the child a clear picture of the advantages and disadvantages of each trade. One of the great dangers of vocational guid-

ance is that it may become inspirational rather than informational. An allied danger is the implanting in the child of individualistic ideas of success alone, and the neglect of the social agencies through which the child can better his position. This is illustrated by a recent book on vocational guidance which emphasized the necessity of copying Patrick Henry, Andrew Carnegie, Hugh Chalmers, Henry Clews, Albert J. Beveridge and John D. Rockefeller, but did not once mention trade-unionism!

IV. PROBLEMS OF VOCATIONAL GUIDANCE

I. What Agencies Should Administer Vocational Guidance. It is of course quite clear that the school has a large part to play in any program of vocational guidance. The school should know the aptitudes and interests of the child better than any other agency and it can furnish him with information about the industries and help to form his choice.

But only in the rarest of cases can the school find him a job, or follow him up at his work after he has once begun. Once he has left its doors, its contact with him ceases and the youth is left to get a job in the same fashion as an adult.

In the main, he must depend either upon tramping the streets looking for a position or upon the services of private employment agencies. This is bad enough for a man, but it is still worse for a child. Such a method or rather lack of method not only results in a great waste of time and exorbitant fees, but also in no attempt being made to fit the youth into his proper niche. Whether he places himself, or is placed by one of an innumerable number of private agencies, the number of positions from which he has to choose is necessarily limited. The private agencies, moreover, are more anxious to place him than to place him correctly, since what they are concerned with is the fee.

Not only does this result in an almost complete lack of

proper placement, but it effectively prevents follow-up work. Neither the school nor any other agency can coördinate the large number of private employment agencies and thus keep in touch with the boy while he is at work, help him while there, and assist him to new positions. He is inevitably lost sight of, and there is no one permanent record of his industrial experience and no one body in continuous touch with him.

It is plainly necessary that there should be some one central agency which should: (1) have the exclusive task of finding work for juveniles under a given age, preferably 21; (2) be run for service, not for profit. Private philanthropic agencies, such as the Alliance Employment Bureau in New York, are clearly inadequate. The only possible agency to meet these needs would be a system of public employment offices, which would not be merely one of a number of juvenile placement agencies, but would have an absolute monopoly of the field. This bureau would not only place the child in his first position, but every time the child left one job and sought another, he would be compelled to clear through the bureau. This would keep the bureau constantly in touch with what the boy was doing and with his home address. The boy's record would show how he was progressing in industry and follow-up work could easily be administered.

The removal of the profit motive would in itself abolish one cause of improper placing, but the public bureau should beware of following the same principles in placing juveniles as in finding employment for adults. While a public employment office does not measure its success by the amount of fees received, it frequently does regard the number of positions filled as the crucial test. This is perhaps a proper test for adults, but not for children. Children need not only to be placed, but to be placed correctly. If an employment

office is anxious to make placements, it is likely to send children to jobs at which they should never work. The National Labor Exchanges in Great Britain made this mistake during the first years of their work.

So different are the problems of juveniles, that every public employment office of sufficient size should have a separate juvenile division to care solely for minors. The British employment system has such a division and it has done very effective work,¹ as has the Indiana State Employment Service in this country. The Federal Employment Service, in the latter part of 1918, also created such a staff bureau and tried to get its local branches to create such functionalized divisions.

Juvenile placement work of this sort should of course be thoroughly coördinated with both school and industry. The school can do the preparatory work of information and guidance and turn the child over to the employment office for placement. The employment office on the other hand, can study the industries and enlist their coöperation in receiving the boys and giving them an opportunity for advancement. Both employers and workmen should be enlisted in the support of the work and joint boards, similar to the community labor boards created during the war, would be of great benefit.

2. *When Should Vocational Guidance Begin.* We have seen that the schools should always do preparatory work in vocational guidance before turning the child over to the employment office. But when should they begin this preparation? Vocational guidance is today almost entirely confined to the high school and rarely exists in the lower grades save in the form of some casual instruction. This

¹ See Arthur Greenwood, *Juvenile Labor Exchanges and After-Care*; Bruno Lasker, *The British System of Labor Exchanges*, pp. 39-44; U. S. Bureau of Labor Statistics, *Bulletin No. 206*.

means that the vast majority of children do not receive this guidance, and in order that they may, it must be introduced into the elementary schools. This has been done in certain Cincinnati schools.¹

3. *How Much Assistance is Vocational Guidance for Children under 16?* The fact that the vast majority of children under 16 go into routine jobs which require little or no intelligence has already been fully shown. Employers will not hire boys and girls of this age for responsible positions. What can vocational guidance do for this class of children? It cannot recommend those occupations which children now enter, nor can it secure better positions for them because they are not wanted. Its hands are tied. Modern industry makes it impossible for most children of this age to develop at work; they can only degenerate. There is little choice between good and bad jobs; the child can as a rule choose only between a number of evils. Keen students of vocational guidance have observed this: Mrs. Helen T. Wooley after her investigation in Cincinnati, declared: "There is no work open to them (14-16-year-old children) worth advising them to take."² Dr. E. L. Talbert concluded as a result of his Chicago study that: "Little service can be rendered by the vocational adviser if children leave school before the age of sixteen years."³ Mrs. Alice Barrows Fernandez made a thorough investigation in New York City and expressed her conclusions in even stronger language: "The only thing which vocational guidance could

¹ A. F. Goodwin, "Vocational Guidance in Cincinnati," in *Bloomfield's Readings in Vocational Guidance*.

² Helen T. Wooley, "Charting Childhood in Cincinnati," *The Survey*, vol. xxx, p. 605 (August 9, 1913).

³ E. L. Talbert, "Opportunities in School and Industry for Children of the Stockyard District," in *Bloomfield's Readings in Vocational Guidance*, p. 432.

contribute to the problem was that there was no possibility for vocational guidance."¹

Vocational guidance by itself is, therefore, almost powerless to better the immediate condition of the child. If they could stay out of industry until they were 16, however, it would give them not only more knowledge but a more mature physique and mind.

¹ *Bull. No. 9, Publications of the Educational Association of the City of New York*, p. 9.

CHAPTER XIII

THE SMITH-HUGHES ACT OF 1917

*Providing Federal Aid to Vocational Education*¹

IN 1917, the Smith-Hughes Act, providing federal aid to the states for vocational education, passed Congress and became a law. The passage of this act was the fruition of a long legislative campaign to secure federal aid for this purpose. Somewhat similar bills had been introduced in several preceding Congresses, and in 1912 the Page bill had passed the Senate but had been defeated in the House. In 1914, upon the recommendation of Congress, a commission on National Aid to Vocational Education was appointed by the President. This commission reported favorably and submitted a bill to Congress which was introduced in the Senate by the same state. This bill was vigorously supported by the American Federation of Labor, the National Society for the Promotion of Industrial Education, and by large industrial interests. It was passed by the Senate in 1916 and, with slight modification, by the House in February 1917, and went into effect on July 1st of that year.²

The act provides that every dollar allotted by the Federal

¹ This chapter has appeared in the *Political Science Quarterly* for December, 1920.

² Public, No. 347, 64th Congress. For an analysis and interpretation of the law, see "What is the Smith-Hughes Bill?" *Bulletin 28, of the National Society for the Promotion of Industrial Education and Bulletin 2 of the Federal Board for Vocational Education.*

Government shall be met with an additional dollar appropriated by the state or locality. The money allowed by the national government and duplicated by the states must be spent only for the salaries of teachers of trade and home economics subjects and of teachers and directors of agricultural subjects, and in preparing teachers for these subjects. The state or local community must provide, maintain and equip the buildings where the subjects are taught, while the federal government will permit a small portion of the funds for teacher training to be used in selecting and placing the vocational teachers.

The amount appropriated for the varying purposes by years is given below :

FEDERAL AID FOR VOCATIONAL EDUCATION

<i>Fiscal year ending June 30th</i>	<i>Total</i>	<i>Agriculture: For salaries of teachers, supervisors and directors</i>	<i>Trade, home economics and industry: For salaries of teachers</i>	<i>Teacher training: For salaries of teachers and maintenance of teacher training</i>	<i>For Federal Board for Vocational Education</i>
1917-18 . .	\$1,860,000	\$548,000	\$566,000	\$546,000	\$200,000
1918-19 . .	2,512,000	784,000	796,000	732,000	200,000
1919-20 . .	3,182,300	1,024,000	1,034,000	924,000	200,000
1920-21 . .	3,836,000	1,268,000	1,278,000	1,090,000	200,000
1921-22 . .	4,329,000	1,514,000	1,525,000	1,090,000	200,000
1922-23 . .	4,823,000	1,761,000	1,772,000	1,090,000	200,000
1923-24 . .	5,318,000	2,009,000	2,019,000	1,090,000	200,000
1924-25 . .	6,380,000	2,534,000	2,556,000	1,090,000	200,000
1925-26 . .	7,367,000	3,027,000	3,050,000	1,090,000	200,000
Annually thereafter.	7,367,000	3,027,000	3,050,000	1,090,000	200,000

It will be noted that the appropriations increase annually from 1917-18 when only \$1,860,000 was available to 1925-26 when nearly \$7,500,000 will be available. The amount appropriated for the administrative expenses of the Federal Board remains constant at \$200,000 throughout the period.

While teacher training reaches its maximum of \$1,090,000 in 1920-21 and does not increase thereafter, the other two branches of work increase annually until 1925-26 when they each will have approximately \$3,000,000 from the Federal Government. Since every federal dollar must be met with at least an additional dollar, as much as \$14,000,000 may be available for vocational education in 1925-26, as a direct result of this legislation.

The types of schools which can receive aid from the Federal Government should be carefully noted. As has been said, they must be publicly controlled, and supervised, and designed to meet the needs of children over 14, in order to fit them for useful employment, but they must be of less than college grade. Within these general requirements the schools were required to conform to the following regulations together with such others as the Federal Board might set up.

1. *Schools for Agricultural Subjects.* Proper methods of teaching agriculture have not yet been agreed upon by educators and the act was purposely somewhat vague in laying down standards in this field, providing merely that supervised practice in agriculture, on a farm provided by the school or some other farm, should be given for at least six months per year and that the teachers and directors should have the minimum qualifications determined by the state and approved by the Federal Board.

2. *Schools for Trade, Home Economics and Industrial Subjects.* (a) At least one-third of the money appropriated to any state should be devoted to part-time (continuation) schools or classes for workers between 14 and 18 years of age. These continuation schools should provide for not less than one hundred and forty-four hours of class-room instruction per year and could teach such subjects as would

"enlarge the civic and vocational intelligence" of the worker. (b) That schools of classes instructing persons not yet entered upon employment should devote not less than half of their instruction to practical work "on a useful or productive basis." The total time spent for instruction was not to be less than thirty hours a week for a minimum of nine months of the year. This type of trade school was really designed as a unit trade school where the child would be taught one particular trade. (c) In cities and towns of less than 25,000, the unit trade-school plan for those not yet entered upon employment could be modified with the approval of the Federal Board to meet the needs of the particular locality. This was designed so that the basic principles of a number of trades could be taught in the smaller cities instead of those of one only, as is the case in cities of over 25,000. (d) Evening industrial schools should not admit anyone under 16 years of age, and should confine their instruction to that which is "supplemental to the daily employment." (e) All teachers in these schools or classes should have the minimum qualifications for teachers of such subjects as determined upon by the state and approved by the Federal Board.

3. *Schools for Teacher Training.* Since teacher-training for vocational subjects was an almost wholly unexplored field, the act granted to the Federal Board the power of laying down general standards, but specified: (a) That the teacher training should be given only to those who had had adequate vocational experience in the line of work they were preparing to teach. The general principle that competent workmen should be trained to teach their trade knowledge rather than that teachers be given trade experience was thereby established. This was undoubtedly a wise act, and it should insure a more solid content to the vocational work

than could ever have been obtained by the other method. (b) To prevent the undue slighting of any subject, it was specified that not less than 20% nor more than 60% of the quota of any state for training teachers should be spent for agriculture, for the trades and industries, and for home economics.

The funds apportioned among the states by Congress were not left to be distributed according to their whims or the demand for "pork," but upon the basis of population, as evidenced by the last preceding census, according to the following system: Each state was granted a minimum appropriation of \$5000 annually for the salaries of teachers and directors of agricultural subjects, the same amount for the salaries of teachers of home economics, trade and industrial subjects, and the same for the maintenance of teacher-training for these subjects, or \$15,000 in all. The amount appropriated each year for teachers and directors of agricultural subjects was to be divided among the states in the proportion which their rural population¹ formed of the total rural population of the Continental United States. The amount appropriated for the salaries of teachers of home economics, trade and industrial subjects was to be divided among the states in the proportion which their urban population² formed of the total urban population of the Continental United States. The sums appropriated for the maintenance of teacher training for these subjects was distributed on the basis of the proportion which the total population of each state formed of the total population of the Continental United States.

There was a very real opposition on the part of the advocates of the bill to placing the administration of the act

¹Localities under 2500.

²Localities over 2500 people.

under the Bureau of Education or where control could be exercised by the "school men." The Smith-Hughes Bill consequently originally provided for an interdepartmental board of five cabinet officers,¹ as the agency to administer the act. This was wisely amended so that three independent members who were to be appointed directly by the President would serve with the four ex-officio members.² The cabinet members have been so busy with the affairs of their own departments that the actual conduct of affairs has largely fallen upon the three appointees to the board.

The Federal Board was given wide powers and was the agency created to evolve national standards and minimums of vocational education. It was given the authority to withhold allotments to any state when it believed that the federal moneys, or their state equivalent were not being expended for the purposes of, or under the conditions laid down by the act. A state board had the right of appeal from the decision of the Federal Board to Congress, but unless specifically upheld, the sums in question were to revert to the Treasury.

In addition to its administrative powers, the Board was authorized to conduct investigations and make researches into the various phases of vocational education and its administration, and to publish its findings. Since it was provided with liberal funds for its purposes, it was made the center for research in the field as well as for the formulation of policies.

In order that a state might receive the benefits of the act, the legislature was compelled to create a state board of not less than three members, to administer the act within

¹ This was to consist of the Postmaster-General and the Secretaries of the Interior, Agriculture, Commerce and Labor.

² Secretaries of Commerce, Agriculture and Labor, and the Commissioner of Education.

the state and to coöperate with the Federal Board. This board could be either the state board of education or a separate body. Since many legislatures were not meeting in 1917 or had closed their sessions before the act was passed or at least was generally known, the governors of these states were authorized to accept the act temporarily and to create a board to administer it, pending action by the state legislature in the first sixty days of its next session.

Any state could defer accepting any of the three funds provided, but after June 30, 1920, in order for a state to accept federal funds for teachers' salaries in agriculture and trades, industries and home economics, respectively, it was compelled to take advantage of (and match equally) the minimum sums appropriated for teacher training in these two branches of subjects.

Although the act was passed in February, 1917, the pressure of war conditions was so great that the President did not appoint the three members of the board till July 17th.¹ Charles A. Prosser,² was appointed Director (or executive officer) of the Board in August. A series of meetings with representatives of the states was held in the same month, at which the act was explained and general policies formulated.

The tasks of the Board were increased by the war-time responsibilities that they assumed. Emergency training for conscripted men, conducted chiefly in the evening, was promoted by it and approximately 19,000 men were given some training in radio classes, and 16,000 in mechanical trades. In addition to this, the Smith-Sears Act, passed in April,

¹ They were Arthur E. Holden, to represent Labor; Charles E. Greathouse, to represent Agriculture; and James P. Munroe, to represent Manufacturing and Commerce. C. E. Mackintosh has since replaced Mr. Greathouse.

² Since resigned.

1918, placed the Federal Board in charge of the vocational education of the disabled soldiers and sailors, and appropriated \$2,000,000 to be used by the Board for this purpose. \$14,000,000 more was appropriated for this purpose by Congress in the summer of 1919 and large appropriations in 1920. The board has therefore concentrated its attention on problems for which it was not originally created.¹

By June 30, 1919, the act had been accepted by legislatures of all the states save that Rhode Island did not accept the federal aid for agriculture. Due to the newness of the act, practically one-half of the allotments were not utilized by the states during the first year (June 30, 1917-June 30, 1918) and one-third were not utilized in the second year as is shown by the following table:²

AMOUNTS OF FEDERAL AID GRANT EXPENDED AND UNEXPENDED BY THE STATES, FOR THE FISCAL YEARS, 1917-18, 1918-19

Purpose	1917-18			1918-19		
	Amount sent to States	Amount expended by States	Amount unexpended by States	Amount sent to States	Amount expended by States	Amount unexpended by States
Agriculture. . .	\$547,027	\$273,587	\$273,440	\$783,000	\$526,000	\$257,000
Trade, Industry and Home Economics. .	364,444	365,469	198,975	794,000	610,000	184,000
Teacher Training	544,144	196,727	347,417	730,000	426,000	304,000
Total	\$1,655,615	\$835,783	\$819,832	\$2,307,000	\$1,561,000	\$745,000
Per cent.	100.0	50.5	49.5	100.0	67.7	32.3

¹The administration of this work has been upon a national and not upon a federal basis.

²Compiled from data given in the *Second Annual Report of the Federal Board for Vocational Education*, pp. 110-112; and *Third Annual Report*, p. 210.

The unexpended balances are to be deducted from the next year's allotments to the respective states.

It was feared in many quarters that the opportunity given the states to set up separate boards from the state boards of education would cause the so-called "dual system" of control to be fastened upon the country. This system had been advocated in 1914 and at later sessions of the Illinois legislature by Mr. E. J. Cooley and by the Chicago Commercial Club, and had been opposed by labor unions and civic bodies who feared that the vocational school would thus be taken out of the hands of the educators and placed in the control of the manufacturers.

In 31 states the state boards of education were made the boards for vocational education and unit control was thereby continued. For eight of the remaining states there had previously been no state board of education that could have assumed the duties, while one (Wisconsin) already had a separate board of vocational education. Omitting Wisconsin and Colorado, (where the state board of agriculture was designated to act for the state), an analysis of the remaining fifteen states indicates that control is still exercised by the educators and has not been ceded to the employing interests. In six of these boards all the members are educators;¹ two of them are composed exclusively of educators and state officials;² on two more the educators are overwhelmingly in the majority;³ while on all of the remaining five⁴ they are represented, and the farming and labor interests are also represented, so that control cannot be exercised by the employers.

¹ Alabama, Kentucky, Michigan, Mississippi, North Carolina and South Dakota.

² Illinois and Nebraska.

³ Ohio and Oklahoma.

⁴ Georgia, Iowa, Maine, New Hampshire and Oregon.

While it is possible that later appointments may change the complexion of some of these boards, for the present at least, there need be no fear that the large industrial interests will dictate the policy of industrial education that is to be pursued.

At the time of the passage of the act, seven states¹ had systems of state aid to localities for vocational education. In five of these states² the addition of federal aid was met by merely continuing the previous state appropriations, while in two,³ additional sums were appropriated. In certain of these states the state contributes an equal share to that of the federal government and requires the locality to contribute at least an equal amount. Here each of the three agencies bear one-third of the expense, and the federal aid is doubled by the state and by the localities. In other states, the share of the locality is merged with that of the state in meeting the federal appropriation.

A different sort of a problem faced the legislatures of the remaining forty-one states, which had previously had no system of state aid to localities for vocational education. Should the state itself appropriate the money to match the federal grant; should it throw the burden upon the localities, or should the two bear it jointly? Twenty-five states⁴ or over half the remaining number, made appropriations equal to or greater than the federal allotments. Localities

¹Connecticut, Indiana, Massachusetts, New Jersey, New York, Pennsylvania and Wisconsin. Virginia had a law providing for such a system but no funds for this purpose had been provided by the legislature.

²Indiana, Massachusetts, New York, Pennsylvania and Wisconsin.

³Connecticut and New Jersey.

⁴Alabama, Arizona, California, Colorado, Delaware, Florida, Idaho, Illinois, Kansas, Maine, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Utah, Vermont and Virginia.

of course could make additional appropriations and in many cases were expected to do so. In the sixteen remaining states,¹ appropriations were made by the legislatures which were not equal to the federal allotments and the localities were expected to make up the remainder. In Mississippi, Oklahoma and Texas particularly the intention seems strong to have the localities (if they will), rather than the states, assume the brunt of duplicating the federal allotments.²

It will be seen from the foregoing analysis that the federal appropriations have not resulted in replacing funds previously appropriated by states or localities for vocational education. To illustrate: (1) Let us suppose that the localities of a state have been spending \$50,000 annually for vocational work. The state's allotment from the federal fund is \$25,000. In the first year, the state or its localities cannot reduce their expenditures and have the difference made up by the federal funds. The \$25,000 of federal money must be added to the \$50,000 of the state or locality.

(2) Indeed what has generally happened in the states which have appropriated funds equal to the federal grants, has been as follows: Whereas the localities of a state may have been spending \$20,000 a year for proper vocational education projects and the state nothing, the federal grant of \$25,000 is met by a state appropriation of an equal amount and \$50,000 is thus added to the amount hitherto expended. Even where the state has not duplicated the federal funds, they have generally made a net addition to the general cause. Localities, moreover, have in many cases increased their previous appropriation.

¹Arkansas (until 1921), Georgia, Kentucky, Iowa, Louisiana, Maryland, Michigan, Mississippi, North Dakota, Oklahoma, Rhode Island, South Dakota, Texas, Washington, West Virginia, Wyoming.

²Thus in Oklahoma, the state appropriation amounted to about 5% of the federal allotment and in Mississippi, to about 10%.

The federal grants mean consequently not only a net addition to the funds for vocational education but in the majority of cases have called forth at least an equal additional appropriation from the states or localities. Several states have indeed already appropriated far more than is legally required and doubtless many others will follow their example in the future.

The Board has been slowly working out standards of vocational education upon which to base its policy in granting or refusing aid. Training in agriculture and home economics subjects is still in such chaotic condition that the Board has not found it possible to lay down standards for the fields other than indicating that the supervised home project should be used as much as possible in agricultural work.

Perhaps the most important issue in vocational education is as to whether the training given shall be confined solely to the trade at which the student works or whether it shall also prepare him for other trades, if he needs such preparation, and educate his general faculties as well. As has been mentioned previously, night-schools receiving federal aid must confine themselves to those things connected with the occupation the student follows. Continuation schools may be (a) supplementary to the young workers' trade, (b) a preparation for other industries or (c) a medium of giving general civic training. All of these subjects may indeed be given as courses in the same school and be taken by the boys and girls.

It is, however, probably not unfair to the Federal Board of Vocational Education to state that its influence is more on the side of the narrow supplementary training than upon the broader aspects. Any such conception of industrial education fails of course to take account of the fact that it is manifestly improper to train boys and girls only for the

occupations at which they are engaged, when most of these occupations are ones that should never be filled by the children.

The work of the various types of schools must conform to a certain standard of efficiency before the Federal Board will grant aid. To determine this, the Board relies upon the reports made by the state boards and inspection by its own agents who operate from the headquarters of the five districts into which the country is divided for the purpose of administration.¹ During the second fiscal year which ended June 30, 1919, 1931 schools applied for Federal Aid and of these, 1789, or 92.6%, were approved and 142, or 7.4%, were rejected.²

In the year ending June 30, 1919, approximately 195,000 pupils were enrolled in the vocational courses; 121,000 of whom were males and 74,000 females. Some 18,000 of these were enrolled in agricultural subjects; 19,000 in all day trades or industrial schools; 73,000 in continuation schools³ (51,000 of these being in general continuation schools and 22,000 in trade or industrial continuation schools); 44,000 in the evening industrial schools, and 41,000 in home economics schools.⁴ In addition to this, 7400 students had received teacher training during the year. As has been pointed out in Chapter XI, as a result of the act seventeen states have now passed compulsory continuation school laws. The use of the federal aid system is

¹ New York City, Atlanta, Ga., Indianapolis, Ind., Kansas City, Mo., San Francisco, Cal.

² *Third Annual Report of the Federal Board for Vocational Education*, 1919, p. 229.

³ 40,000 of these were in the continuation schools of Pennsylvania, and 9,000 in those of Massachusetts.

⁴ Compiled from data given in the *Third Annual Report of the Federal Board for Vocational Education*, 1919, p. 220.

a particularly happy administrative device since it:¹ (1) assists the poorer states, (2) ensures a certain national minimum standard, (3) ensures relatively economical expenditure of federal funds, since the localities are compelled to contribute at least an equal amount, (4) grants initiative and autonomy to the states, (5) solves constitutional objections to federal action, since a state only accepts the system of its own free will, (6) centralizes research, and (7) integrates the educational system within the states.

¹ For a description and analysis of the newly created system of federal aid see my articles, "The Development of a System of Federal Grants in Aid," *Political Science Quarterly*, vol. xxxv, pp. 255-272; 522-545 (June and December, 1920).

—3. THE PRESENT CONDITION OF CHILDREN IN INDUSTRY :

- *Report of the Commission on National Aid to Vocational Education*, House Doc. 1004, 63rd Congress, 2nd Session, 2 vols.
 Thorndike, E. L., "The Elimination of Pupils from Schools," United States Bureau of Education, *Bull. No. 4*, 1908.
 Strayer, George D., "Age and Grade Census of Schools and Colleges," United States Bureau of Education, *Bull. No. 5*, 1911.
Report on Condition of Women and Child Wage-Earners in the United States, 19 vols., Senate Doc. 645, 61st Congress, 2nd Session.
 Barrows, Alice P., "Report of Vocational Guidance Survey," *Bull. No. 9*, Public Education Association of the City of New York.
Report Massachusetts Commission on Industrial and Technical Education (1906).
 Atherton, Sarah H., *Survey of Wage-Earning Girls below 16 years of age in Wilkesbarre, Pa.*, published by the National Consumers' League.
 Talbert, Ernest L., *Opportunities in School and Industry for Children of the Stockyards District*.
 Davis, Anne, *Finding Employment for Children Who Leave the Grade Schools to go to Work*.
 Hiatt, J. S., *The Child, The School, and The Job*.

4. THE AMOUNT AND CHARACTER OF SKILL REQUIRED IN MODERN INDUSTRY :

- de Rousiers, Paul, *The Labour Question in Britain*.
Thirteenth Annual Report United States Bureau of Labor, "Report on Hand and Machine Labor."
 Taylor, Frederick W., *Shop Management*.
 Drury, Horace B., *Scientific Management*.
The Present State of the Art of Industrial Management, Report of Committee on Administration of National Society of Mechanical Engineers (1912), reprinted in C. B. Thompson's *Scientific Management*, pp. 153-174.
 "Vocational Education Survey of Richmond, Va., *Bull. 162*, U. S. Bureau of Labor Statistics.
 "Vocational Education Survey of Minneapolis, Minn.," *Bull. 199*, U. S. Bureau of Labor Statistics.
 "Vocational Education Surveys of Richmond, Evansville, and Indianapolis, Indiana," Indiana State Board of Education, *Bulletins Nos. 18, 19 and 21*.

5. THE STATUS OF WOMEN IN INDUSTRY :

- Report on the Condition of Women and Child Wage-Earners* (19 vols.) referred to above.

Abbott, Edith, *Women in Industry*.

Hedges, Anna C., *The Wage-Worth of School Training*.

References to the studies by Van Kleeck, O'Leary, Bryner, Allinson, Perry, Butler, Leonard, and Phillips on specific trades can be found in the footnotes of Chapter VI.

6. THE GENERAL ASPECTS OF INDUSTRIAL EDUCATION :

Eighth Annual Report U. S. Bureau of Labor (1892) on Industrial Education.

Seventeenth Annual Report U. S. Bureau of Labor (1902) on Trade and Technical Education.

"Trade and Technical Education in the United States," *Bull. 54*, U. S. Bureau of Labor (1904).

Twenty-fifth Annual Report U. S. Bureau of Labor (1910) on Industrial Education.

Bulletins of the National Society for the Promotion of Industrial Education, now the National Society for Vocational Education.

Persons, Harlow, S., *Industrial Education*.

Leake, A. H., *Industrial Education*.

Snedden, David, *The Problem of Vocational Education*.

Gillette, J. M., *Vocational Education*.

Federal Board for Vocational Education, *Bull. 17*, Trade and Industrial Education.

Hill, David S., *An Introduction to Vocational Education*.

7. THE TRADE SCHOOL :

The Report of the Massachusetts Commission on Technical and Industrial Education (1906).

Dean, Arthur D., *The Worker and the State*.

8. EVENING AND CORRESPONDENCE SCHOOLS :

Annual Reports Commissioner of Education.

Jones, Arthur J., "The Continuation School in the United States," U. S. Bureau of Education, *Bull. No. 1*, 1907.

Van Kleeck, Mary, *Working Girls in Evening Schools*.

9. CORPORATION SCHOOLS AND TRAINING DEPARTMENTS :

Publications of the National Association of Corporation Schools.

Bulletins of the United States Training Service.

Miles, H. E., "The Vestibule School," *The Survey*, March 6, 1920, pp. 700-706.

Beatty, A. J., *The Corporation School*.

Kelley, Roy W., *Training Industrial Workers*.

10. COÖPERATIVE AND PART-TIME CONTINUATION SCHOOLS :

Park, C. W., "The Coöperative System of Education," U. S. Bureau of Education, *Bull. No. 37*, 1916.

McCann, M. R., "The Fitchburg Plan of Coöperative Education," Bureau of Education, *Bull. No. 50*, 1913.

Kerchensteiner, Georg, *Three Lectures on Vocational Training*.

Carris, Lewis H., "Part-Time Compulsory School Attendance Laws," read before National Society for Vocational Education, Feb. 21, 1920.

Federal Board for Vocational Education, *Bull. 19*, "Part-time Trade Industrial Education."

11. VOCATIONAL GUIDANCE:

Brewer, John M., *The Vocational Guidance Movement*.

Bloomfield, Meyer, *Youth, School and Vocation*.

—, "The School and the Start in Life," U. S. Bureau of Education, *Bull. No. 4*, 1914.

—, *Readings in Vocational and Moral Guidance*.

Davis, J. B., *Vocational and Moral Guidance*.

Wooley, Mary T., "Charting Childhood in Cincinnati," *The Survey* vol. xxx, pp. 601-606 (August 9, 1913).

—, "The Issuing of Working Permits and its Bearing on Other School Problems," *School and Society*, vol. i, pp. 726-733 (May 22, 1915).

Link, Henry C., *Employment Psychology*.

12. FEDERAL AID FOR VOCATIONAL EDUCATION:

Report of Commission on National Aid to Vocational Education, 2 vols., House Doc. 1004, 63rd Congress, 2nd Session.

"What is the Smith-Hughes Act?" *Bull. No. 28* of the National Society for the Promotion of Industrial Education.

Federal Board for Vocational Education, *Bull. No. 2*, "Statement of Policies."

First, Second, and Third Annual Reports of the Federal Board for Vocational Education.

Douglas, Paul H., "The Development of a System of Federal Grants-in-Aid," *Political Science Quarterly*, vol. xxxv, pp. 255-272, 522-545 (June and December, 1920).

13. THE ATTITUDE OF LABOR AND CAPITAL TOWARDS APPRENTICESHIP AND INDUSTRIAL EDUCATION:

In addition to the historical references given, see:

Bemis, Edward W., "The Relations of Trade-Unions to Apprentices," *Quarterly Journal of Economics*, vol. xvi, pp. 76-93.

Motley, J. M., "Apprenticeship in American Trade Unions," *Johns Hopkins University Studies*.

Weyl and Sakolski, "Conditions of Entrance to the Principal Trades," U. S. Bureau of Labor, *Bull. No. 67*.

Sikes, George C., "Old and New Conditions of Apprenticeship in Building Trades," *Journal of Political Economy*, vol. ii, pp. 408.

Wolfe, French E., "Conditions of Entrance to American Trade Unions," *Johns Hopkins University Studies*.

Ashworth, John H., "The Helper in American Trades-Unions," *Johns Hopkins University Studies*.

Report of Committee on Industrial Education of the American Federation of Labor, published as Senate Document No. 936, 62nd Congress, 2nd Session.

Bulletins National Association of Manufacturers.

Sanger, C. P., "The Fair Number of Apprentices to a Trade," *Economic Journal*, vol. v, pp. 613-36 (1895).

14. ECONOMIC ASPECTS OF INDUSTRIAL EDUCATION :

Dodge, J. M., *Transactions American Society Mechanical Engineers*, vol. xxv, pp. 40-48.

O'Leary, Wesley A., "The Wage Value of Vocational Training," *Fourth Annual Report New York Factory Investigation Commission*, pp. 1411-1460.

Ellis, A. Caswell, "The Money Value of Education," U. S. Bureau of Education, *Bull.* No. 22, 1917.

Taussig, Frank W., "Minimum Wages for Women," *Quarterly Journal of Economics*, vol. xxx, pp. 411-443.

The footnotes to the various chapters will also serve as a guide to the investigator. There are several bibliographies which will open up a wider field, and among these may be mentioned :

Richards, Charles R., "Selected Bibliography on Industrial Education" (1907), published as *Bull. No. 2* of the National Society for the Promotion of Industrial Education.

"Selected Bibliography on Industrial Education" in the *Twenty-fifth Annual Report of the U. S. Bureau of Labor* (1911), pp. 519-539.

"Bibliography of Industrial, Vocational and Trade Education," U. S. Bureau of Education, *Bull. No. 22* (1913).

Brewer, John M., and Kelley, Roy W., *A Selected and Critical Bibliography of Vocational Guidance* (1917), Harvard University Press.

INDEX

A

- Accidents, 125-126
- Age of compulsory education advocated, 331, 332; at which children leave school, 85-88
- Agriculture, 26, 27, 28, 38-39, 138
- American Federation of Labor, attitude towards apprenticeship 281; advocacy of Smith-Hughes bill, 293; general policy towards industrial education, 315-323
- Americanization classes, 218
- Apprenticeship, definition, 11-12; English background, 25, 26; extent, 12-16; functions, 19-20, 41-47; 49-52; indentured servants and, 28-29; colonial, 39-52; legal theories, 12, 22-23-29; effect of factory system upon, 54-56, 56-58, 60-62, 73-74; 82-84; and trades unions, 61-67, 69-73; 75; in Wisconsin, 78-80; for women, 48-49; schools, 212-218, 222-228
- Artificers, Statute of, 25-26
- Arts and Crafts Movement, 122
- Atherton, Sarah, 93
- Aves, Ernest, 314
- Ayres, L. P., 86, 88n., 199n

B

- Ballagh, J. C., 33f, 38
- Barrows, Alice, 89-90, 92, 97, 291
- Bemis, E. W., 70f, 73f
- "Blind-alley" jobs, 96-99; 334-335
- Bloomfield, Meyer, 271
- Boarding-house system, 258
- Bruce, P. A., 31n, 39
- Building trades, 64, 65, 86, 112, 116
- Butler, Elizabeth B., 160

C

- Canadian Commission on Technical Education, 242
- Chapin, R. C., 90

551]

- Chicago City Club, investigation by, 105, 119
- Chicago Commercial Club, 301, 327
- Chicago Conference of Workingmen, 64, 65, 66
- Child labor, 55, 56-59, 60-61, 85, 86-87, 96-99, 99-105, 105-109
- Chivalry, 18
- Classes, for unskilled workers, 218
- Clerical force, 168-170; training of, 222
- Cygnaeus, 176
- Clothing industry, 112, 114, 142-150
- Commons, J. R., 37
- Continuation Schools, compared with co-operative schools, 244-246; early advocacy of, 252-253; Ohio, 253-254; Wisconsin, 254-255; New York, 255-256; New Jersey, 256; Massachusetts, 256-259; Indiana, 259-260, Pennsylvania, 260-262; results of Smith-Hughes act upon, 262; digest of recent laws, 263-265; advantages of, 265-268; economic effects, 312-3; suggested, 334
- Cooley, E. J., 301
- Coöperative schools, comparison with continuation schools, 244-250; origin of, 246-248; where practised, 247-251; evaluation of, 265-266
- Cooper Union, 234
- Corporation schools, 212-218, 223-228
- Correspondence schools, 239-43
- Cotton industry, 56-59, 100, 112, 114, 151

D

- David Ranken School, 189, 194, 196, 199
- Davis, Anne, 98
- Dean, Arthur D., 191
- Debtors, 31-32, 42

Dewey, John, 273
 Division of labor, 55-56, 86-87
 Dodge, J. M., 307-308
 Douglas Commission, 90, 96, 190-191
 Domestic service, 139-142
 "Dual" control, 301-302, 327
 Dunlap, O. J., 23n.

E

Eastman, Crystal, 125-126
 Economic effects of vocational education, 307-314
 Eddis, William, 38
 Ellis, A. Caswell, 308
 Emergency Fleet Corporation, 116, 117
 Employment bureaus, for juveniles, 288-290, 333-334
 Evening schools, 229-230; private, 231-235; public, 235-239

F

Factory system, 52-56, 56-60, 62, 64, 75-76
 Federal Aid, for vocational education, 293-298; response of states to, 300-304, 305; advantages of, 306
 Federal Board for Vocational Education, creation, 294-295; powers, 298-299; activities, 299-302, 304-305
 Federal Employment Service, 287, 290, 233
 Federation of Organized Trades and Labor Unions, 75
 Fitchburg coöperative school, 248-249
 Flexner, Abraham, 17
 Food industries, 112, 115, 132, 133, 152-154
 Ford Automobile Works, 110
 Foremanship, 120-122, 130-131, 211-212

G

Gallatin, Albert, 57
 General Electric Co., 219, 226, 227
 German, trade schools, 191-192; continuation schools, 24, 252
 Gompers, Samuel, 321, 329
 Green, Duff, 61
 Guilds, English, 25-26; French, 23; Oriental, 16; American, 50

Glass blowing, 64, 70; child labor in, 314

H

Handicraft, 51-52
 Hat workers, 61, 63
 Health, of workers, 126, 127, 128
 Henderschott, F. C., 225
 Hoe and Co., 213
 Hirsch, Baron de (Trade School), 188, 307
 Holder, Arthur E., 299n, 322
 Housekeeping, 170-173

I

Immigration, colonial, 27-28, 30-33; new and old, 76-77
 Indenture, 12, 78
 Indentured servants, 27, 39
 Industrial Revolution, 53-55
 Industrial schools, 207-210
 Interest, as method of vocational guidance, 273-277
 Iron-Molders Union, 63, 65

J

Job analysis, 287
 Jones, A. J., 252

K

Kirchensteiner, Georg, 191-192, 252
 Knights of St. Crispin, 64

L

Labor-saving machinery, 313-314
 Legal theories, of apprenticeship, 11, 12, 22-23, 29
 Length, of apprenticeship, 13, 14, 23, 40-41, 49, 51, 60, 66, 67
 Life occupations, of manual training graduates, 185
 Link, H. C., 220, 282
 Localization of industry, 198-199
 Luther, Seth, 54, 58

M

Machine, building, 111; using, 112-117, repairing, 117-119
 Mandatory and permissive continuation schools, 253-265
 Manhattan Trade School, 195
 Manual Training, 176-186; origin, 176-177; beginnings in America, 177-180; growth, 180-184; inadequacy of, 184-186

Maryland, indentured service in, 27, 31, 33, 34, 35, 36, 38; child labor in, 101-103, 105

Master, 14-15, 34-35, 50-51

Miles, H. E., 193, 205, 324

Millinery, 144-146

Mitchell, John, 319

More, L. B., 90-91

Motley, J. M., 70

N

National Association of Corporation Schools, 214-216, 223

National Association of Manufacturers, 293, 316, 323, 326

National Society for Vocational Education (National Society for the Promotion of Industrial Education), 252, 293, 317, 272

New England, apprentices and apprenticeship education, 42-43, 43-45; early trades, 39-40; factory system 53-54; child labor 57-59

New York, apprenticeship and indentured service in, 40-41, 46; apprentice law of, 1871, 67-69

New York Trade School, 187, 315

Non-competing groups, 129-130, 266-268, 310-313

O

Ogburn W. F., 93, 95

O'Leary, W. A., 308

P

Parsons, Frank, 270, 277

Pennsylvania, apprenticeship and indentured service in, 28, 36, 40-41, 46

Permissive and mandatory continuation schools, 253-265

Persons, C. E., 134

Poor law, English, 26; colonial, 42-43; 19th Century, 59

Poverty, 88-95

Private schools, early, 56, 230; trade, 187-189, 192, 200-202; plant, 211-228; evening, 231-235; correspondence, 240-243

Professions, 17, 138

Program, proposed, 331-339

Prince, Lucinda W., 167-168

Prosser, C. A., 299

Psychological tests, 279-282

Public Schools, free, 44, 46-47, 86, 87, 210, 331-332; manual training,

178-180, 182-186; trade, 189, 190, 193, 335; technical high, 202-205; industrial, 207-210; evening, 230, 235-239; co-operative, 246-251; continuation, 252-268, 334; agricultural, 295

Pupil-teacher system, 18

R

Railway schools, 213, 214, 217

Recording and Computing Machines Co. 221

Richards, C. R., 317

Russell Sage Foundation, 199, 272

S

Sale of product, 195-198

Salaries of vocational teachers, 337

Salesmanship, 163-168, 222

Schneider, Herman, 246-248

Scholarships for children of poor, 332, 333

School, age at which children leave, 85-88; reasons for leaving, 88-96

Scientific Management, 120-122

Shipbuilding, 116-117

Shoe-makers, 50, 53, 62, 64, 150

Skill, in modern industry, 111-112, 112-122; 160-162

Slater, Samuel, 53, 59

Slavery, and apprenticeship, 20-22; and indentured service, 36, 37-39

Smith, Adam, 12-13, 109

Smith-Hughes Act, 292-306; effect on continuation schools 262-265

South, indentured service in, 27-28, 30-31, 32-33, 33-39

Specialization, 109-110, 112-116, 123-125

Steinmetz, C. P., 224

Strayer, G. D., 88

Streightoff, F. H., 91

Strikes, 70, 71

Supply of labor, what is a proper?, 328-329

Surveys, of industries, 284-288; of schools, 272

T

Tabor Manufacturing Co., 121

Talbert, E. L., 291

Taussig, F. W., 309

Taylor, F. W., 120n, 121n, 211

Teacher-training, 296-297; 337

Technical high schools, 202-205
 Textile industry, 112, 114, 150-152
 Thorndike, E. L., 86-88, 273-274
 Trade preparatory schools, 205-207
 Trades-Unions, early attitude towards apprentices, 60-62; attempts to regulate apprenticeship, 62-67, 69-70; effect of restrictions, 70-73; attitude towards vocational education, 315-323
 Trade schools, 187, 190-192; private charitable, 187-189; private commercial, 200-202; public, 189-190; German, 191-192; relative merits of, 193-200
 Trade tests, 281-282
 Training departments, 212, 219-221, 222-228
 Turnover, of juvenile labor, 100-106
 Typographers, 61, 62, 63, 66, 70, 73, 74
 Typothetae, United, 326

U

Unemployment of juveniles, 105-108; effect of vocational training upon, 313
 United Shoe Machinery Co., 117-118

Unskilled labor, 86, 109-122, 160-162

V

Van Cleave, J. W., 324
 Van Kleeck, Mary, 160, 239, 285n.
 Vestibule schools, 220-221
 Vocational guidance, aim, 269-270; development of, 270-273; methods of, 273-288; problems of, 288-292, 333-334

W

Wages, of juvenile labor, 99-100; and the standard of living, 90-94; effect of vocational education upon, 307-310; 310-313; payment to children while attending continuation schools, 329-330
 Williamson Free school, 187-188, 194
 Winona Technical Institute, 316
 Winslow, C. H., 319
 Women, in industry, 138-170
 Woodbury, R. M., 104, 106
 Woods, Erville B., 276
 Woodward, C. M., 177, 180
 Wooley, Helen T., 281, 291, 334

Y

Y. M. C. A., 231-233
 Y. W. C. A., 233

Studies in History, Economics and Public Law

edited by
Faculty of Political Science of Columbia University

VOLUME I, 1891-92. 2nd Ed., 1897. 396 pp. Price, cloth, \$3.50.

1. **The Divorce Problem. A Study in Statistics.**
By WALTER F. WILLCOX, Ph.D. Price, 75 cents.
2. **The History of Tariff Administration in the United States, from Colonial Times to the McKinley Administrative Bill.**
By JOHN DEAN GOSS, Ph.D. Price, \$1.00.
3. **History of Municipal Land Ownership on Manhattan Island.**
By GEORGE ASHTON BLACK, Ph.D. Price, \$1.00.
4. **Financial History of Massachusetts.**
By CHARLES H. J. DOUGLAS, Ph.D. Price, \$1.00.

VOLUME II, 1892-93. (See note on last page.)

1. [5] **The Economics of the Russian Village.**
By ISAAC A. HOURWICH, Ph.D. (*Out of print*).
2. [6] **Bankruptcy. A Study in Comparative Legislation.**
By SAMUEL W. DUNSCOMB, Jr., Ph.D. (*Not sold separately.*)
3. [7] **Special Assessments; A Study in Municipal Finance.**
By VICTOR ROSEWATER, Ph.D. Second Edition, 1898. Price, \$1.00.

VOLUME III, 1893. 465 pp. (See note on last page.)

1. [8] ***History of Elections in American Colonies.**
By CORTLAND F. BISHOP, Ph.D. (*Not sold separately.*)
2. [9] **The Commercial Policy of England toward the American Colonies.**
By GEORGE L. BEER, A. M. (*Out of print.*)

VOLUME IV, 1893-94. 438 pp. (See note on last page.)

1. [10] **Financial History of Virginia.**
By WILLIAM Z. RIPLEY, Ph.D. (*Not sold separately.*)
2. [11] ***The Inheritance Tax.** By MAX WEST, Ph.D. Second Edition, 1908. Price, \$2.00
3. [12] **History of Taxation in Vermont.** By FREDERICK A. WOOD, Ph.D. (*Out of print*).

VOLUME V, 1895-96. 498 pp. Price, cloth, \$3.50.

1. [13] **Double Taxation in the United States.**
By FRANCIS WALKER, Ph.D. Price, \$1.00.
2. [14] **The Separation of Governmental Powers.**
By WILLIAM BONDY, LL.B., Ph.D. Price, \$1.00.
3. [15] **Municipal Government in Michigan and Ohio.**
By DELOS F. WILCOX, Ph.D. Price, \$1.00.

VOLUME VI, 1896. 601 pp. Price, cloth, \$4.50; Paper covers, \$4.00.

- [16] **History of Proprietary Government in Pennsylvania.**
By WILLIAM ROBERT SHEPHERD, Ph.D.

VOLUME VII, 1896. 512 pp. Price, cloth, \$3.50.

1. [17] **History of the Transition from Provincial to Commonwealth Government in Massachusetts.**
By HARRY A. CUSHING, Ph.D. Price, \$2.00.
2. [18] ***Speculation on the Stock and Produce Exchanges of the United States**
By HENRY CROSBY EMERY, Ph.D. Price, \$1.50.

VOLUME VIII, 1896-98. 551 pp. Price, cloth, \$4.00.

1. [19] **The Struggle between President Johnson and Congress over Reconstruction.**
By CHARLES ERNEST CHADSEY, Ph.D. Price, \$1.00.
2. [20] **Recent Centralizing Tendencies in State Educational Administration.**
By WILLIAM CLARENCE WESTER, Ph.D. Price, 75 cents.
3. [21] **The Abolition of Privateering and the Declaration of Paris.**
By FRANCIS R. STARR, LL.B., Ph.D. Price, \$1.00.
4. [22] **Public Administration in Massachusetts. The Relation of Central to Local Activity.**
By ROBERT HARVEY WHITTEN, Ph.D. Price, \$1.00.

VOLUME IX, 1897-98. 617 pp. Price, cloth, \$4.00.

1. [23] ***English Local Government of To-day. A Study of the Relations of Central and Local Government.**
By MILO ROY MALTBY, Ph.D. Price, \$2.00.
2. [24] **German Wage Theories. A History of their Development.**
By JAMES W. CROOK, Ph.D. Price, \$2.00.
3. [25] **The Centralization of Administration in New York State.**
By JOHN ARCHIBALD FAIRLIE, Ph.D. Price, \$1.00.

VOLUME X, 1898-99. 409 pp. Price, cloth, \$3.50.

1. [26] Sympathetic Strikes and Sympathetic Lockouts.
By FRED S. HALL, Ph.D. Price, \$1.00.
3. [27] *Rhode Island and the Formation of the Union.
By FRANK GREENE BATES, Ph.D. Price, \$1.50.
3. [28]. Centralized Administration of Liquor Laws in the American Commonwealths.
By CLEMENS MOORE LACEY SITES, Ph.D. Price, \$1.00.

VOLUME XI, 1899. 495 pp. Price, cloth, 4.00; paper covers, \$3.50.

- [29] The Growth of Cities. By ADNA FERRIN WEBER Ph.D.

VOLUME XII, 1899-1900. 586 pp. Price, cloth, \$4.00.

1. [30] History and Functions of Central Labor Unions.
By WILLIAM MAXWELL BURKE, Ph.D. Price, \$1.00.
2. [31.] Colonial Immigration Laws.
By EDWARD EMERSON PROPER, A.M. Price, 75 cents.
3. [32] History of Military Pension Legislation in the United States.
By WILLIAM HENRY GLASSON, Ph.D. Price, \$1.00.
4. [33] History of the Theory of Sovereignty since Rousseau.
By CHARLES E. MERRIAM, Jr., Ph.D. Price, \$1.50.

VOLUME XIII, 1901. 570 pp. Price, cloth, \$4.00.

1. [34] The Legal Property Relations of Married Parties.
By ISIDOR LOEB, Ph.D. Price, \$1.50.
2. [35] Political Nativism in New York State.
By LOUIS DOW SCISCO, Ph.D. Price, \$2.00.
3. [36] The Reconstruction of Georgia. By EDWIN C. WOOLLEY, Ph.D. Price, \$1.00.

VOLUME XIV, 1901-1902. 576 pp. Price, cloth, \$4.00.

1. [37] Loyalism in New York during the American Revolution.
By ALEXANDER CLARENCE FLICK, Ph.D. Price, \$2.00.
2. [38] The Economic Theory of Risk and Insurance.
By ALLAN H. WILLETT, Ph.D. Price, \$1.50.
3. [39] The Eastern Question: A Study in Diplomacy.
By STEPHEN P. H. DUGGAN, Ph.D. Price, \$1.00.

VOLUME XV, 1902. 427 pp. Price, cloth, \$3.50; Paper covers, \$3.00.

- [40] Crime in Its Relation to Social Progress. By ARTHUR CLEVELAND HALL, Ph.D.

VOLUME XVI, 1902-1903. 547 pp. Price, cloth, \$4.00.

1. [41] The Past and Present of Commerce in Japan.
By YUTARO KINOSITA, Ph.D. Price, \$1.50.
2. [42] The Employment of Women in the Clothing Trade.
By MABEL HURD WILLET, Ph.D. Price, \$1.50.
3. [43] The Centralization of Administration in Ohio.
By SAMUEL P. ORTH, Ph.D. Price, \$1.50.

VOLUME XVII, 1903. 635 pp. Price, cloth, \$4.00.

1. [44] *Centralizing Tendencies in the Administration of Indiana.
By WILLIAM A. RAWLDS, Ph.D. Price, \$2.50.
2. [45] Principles of Justice in Taxation. By STEPHEN F. WESTON, Ph.D. Price, \$2.00.

VOLUME XVIII, 1903. 753 pp. Price, cloth, \$4.50.

1. [46] The Administration of Iowa. By HAROLD MARTIN BOWMAN, Ph.D. Price, \$1.50.
2. [47] Turgot and the Six Edicts. By ROBERT P. SHEPHERD, Ph.D. Price, \$1.50.
3. [48] Hanover and Prussia, 1795-1803. By GUY STANTON FORD, Ph.D. Price, \$2.00.

VOLUME XIX, 1903-1905. 588 pp. Price, cloth, \$4.00.

1. [49] Josiah Tucker, Economist. By WALTER ERNEST CLARK, Ph.D. Price, \$1.50.
2. [50] History and Criticism of the Labor Theory of Value in English Political Economy.
By ALBERT C. WHITAKER, Ph.D. Price, \$1.50.
3. [51] Trade Unions and the Law in New York.
By GEORGE GORHAM Groat, Ph.D. Price, \$1.00.

VOLUME XX, 1904. 514 pp. Price, cloth, \$3.50.

1. [52] The Office of the Justice of the Peace in England.
By CHARLES AUSTIN BEARD, Ph.D. Price, \$1.50.
2. [53] A History of Military Government in Newly Acquired Territory of the United States.
By DAVID Y. THOMAS, Ph.D. Price, \$2.00.

VOLUME XXI, 1904. 746 pp. Price, cloth, \$4.50.

1. [54] *Treaties, their Making and Enforcement.
By SAMUEL B. CRANDALL, Ph.D. Price, \$1.50.
2. [55] The Sociology of a New York City Block.
By THOMAS JESSE JONES, Ph.D. Price, \$1.00.
3. [56] Pre-Malthusian Doctrines of Population.
By CHARLES E. STANGELAND, Ph.D. Price, \$2.50.

VOLUME XXII, 1905. 520 pp. Price, cloth, \$3.50; paper covers, \$3.00.

- [57] **The Historical Development of the Poor Law of Connecticut.**
By EDWARD W. CARREN, Ph. D.

VOLUME XXIII, 1905. 594 pp. Price, cloth, \$4.00.

1. [58] **The Economics of Land Tenure in Georgia.**
By ENOCH MARVIN BANKS, Ph.D. Price, \$4.00.
2. [59] **Mistake in Contract. A Study in Comparative Jurisprudence.**
By EDWIN C. MCKEAG, Ph.D. Price, \$2.00.
3. [60] **Combination in the Mining Industry.**
By HENRY R. MUESSEY, Ph.D. Price, \$4.00.
4. [61] **The English Craft Guilds and the Government.**
By STELLA KRAMER, Ph.D. Price, \$2.00.

VOLUME XXIV, 1905. 521 pp. Price, cloth, \$4.00.

1. [62] **The Place of Magic in the Intellectual History of Europe.**
By LYNN THORNDIKE, Ph.D. Price, \$2.00.
2. [63] **The Ecclesiastical Edicts of the Theodosian Code.**
By WILLIAM K. BOYD, Ph.D. Price, \$2.00.
3. [64] ***The International Position of Japan as a Great Power.**
By SEIJI G. HISHIDA, Ph.D. Price, \$2.00.

VOLUME XXV, 1906-07. 600 pp. (Sold only in Sets.)

1. [65] ***Municipal Control of Public Utilities.**
By O. L. POND, Ph.D. (Not sold separately.)
2. [66] **The Budget in the American Commonwealths.**
By EUGENE E. AGGER, Ph.D. Price, \$1.50.
3. [67] **The Finances of Cleveland.**
By CHARLES C. WILLIAMSON, Ph.D. Price, \$2.00.

VOLUME XXVI, 1907. 559 pp. Price, cloth, \$4.00.

1. [68] **Trade and Currency in Early Oregon.**
By JAMES H. GILBERT, Ph.D. Price, \$1.00.
2. [69] **Luther's Table Talk.**
By PRESERVED SMITH, Ph.D. Price, \$1.00.
3. [70] **The Tobacco Industry in the United States.**
By MEYER JACOBSTHIN, Ph.D. Price, \$1.50.
4. [71] **Social Democracy and Population.**
By ALVAN A. TENNEY, Ph.D. Price, 75 cents.

VOLUME XXVII, 1907. 578 pp. Price, cloth, \$4.00.

1. [72] **The Economic Policy of Robert Walpole.**
By NORRIS A. BRISCO, Ph.D. Price, \$1.50.
2. [73] **The United States Steel Corporation.**
By ABRAHAM BERGLUND, Ph.D. Price, \$1.50.
3. [74] **The Taxation of Corporations in Massachusetts.**
By HARRY G. FRIEDMAN, Ph.D. Price, \$1.50.

VOLUME XXVIII, 1907. 564 pp. Price, cloth, \$4.00.

1. [75] **DeWitt Clinton and the Origin of the Spoils System in New York.**
By HOWARD LER MCBAIN, Ph.D. Price, \$1.50.
2. [76] **The Development of the Legislature of Colonial Virginia.**
By ELMER I. MILLER, Ph.D. Price, \$1.50.
3. [77] **The Distribution of Ownership.**
By JOSEPH HARDING UNDERWOOD, Ph.D. Price, \$1.50.

VOLUME XXIX, 1908. 703 pp. Price, cloth, \$4.50.

1. [78] **Early New England Towns.**
By ANNE BUSH MACLEAR, Ph.D. Price, \$4.50.
2. [79] **New Hampshire as a Royal Province.**
By WILLIAM H. FRY, Ph.D. Price, \$3.00.

VOLUME XXX, 1908. 712 pp. Price, cloth, \$4.50; Paper covers, \$4.00.

- [80] **The Province of New Jersey, 1664-1788.** By EDWIN P. TANNER, Ph.D.

VOLUME XXXI, 1908. 575 pp. Price, cloth, \$4.00.

1. [81] **Private Freight Cars and American Railroads.**
By L. D. H. WELD, Ph.D. Price, \$1.50.
2. [82] **Ohio before 1850.**
By ROBERT E. CHADDOCK, Ph.D. Price, \$1.50.
3. [83] **Consanguineous Marriages in the American Population.**
By GEORGE B. LOUIS ARNH, Ph.D. Price, 75 cents.
4. [84] **Adolphe Quetelet as Statistician.**
By FRANK H. HANKINS, Ph.D. Price, \$1.25.

VOLUME XXXII, 1908. 705 pp. Price, cloth, \$4.50; paper covers, \$4.00.

- [85] **The Enforcement of the Statutes of Laborers.**
By BERTHA HAVEN PUTNAM, Ph.D.

VOLUME XXXIII, 1908-1909. 635 pp. Price, cloth, \$4.50.

1. [86] **Factory Legislation in Maine.**
By E. STAGG WHITIN, A.B. Price, \$4.00.
2. [87] ***Psychological Interpretations of Society.**
By MICHAEL M. DAVIS, Jr., Ph.D. Price, \$4.00.
3. [88] ***An Introduction to the Sources relating to the Germanic Invasions.**
By CARLTON J. H. HAYES, Ph.D. Price, \$2.50.

VOLUME XXXIV, 1909. 628 pp. Price, cloth, \$4.50.

1. [89] Transportation and Industrial Development in the Middle West.
By WILLIAM F. GEPHART, Ph.D. Price, \$2.00.
2. [90] Social Reform and the Reformation.
By JACOB SALWYN SCHAPIRO, Ph.D. Price, \$1.25.
3. [91] Responsibility for Crime.
By PHILIP A. PARSONS, Ph.D. Price, \$1.50.

VOLUME XXXV, 1909. 568 pp. Price, cloth, \$4.50.

1. [92] The Conflict over the Judicial Powers in the United States to 1870.
By CHARLES GROVE HAINES, Ph.D. Price, \$1.50.
2. [93] A Study of the Population of Manhattanville.
By HOWARD BROWN WOOLSTON, Ph.D. Price, \$1.25.
3. [94] *Divorce: A Study in Social Causation.
By JAMES P. LICHTENBERGER, Ph.D. Price, \$1.50.

VOLUME XXXVI, 1910. 542 pp. Price, cloth, \$4.00.

1. [95] *Reconstruction in Texas. By CHARLES WILLIAM RAMSDELL, Ph.D. Price, \$2.50.
2. [96] *The Transition in Virginia from Colony to Commonwealth.
By CHARLES RAMSDELL LANGLEY, Ph.D. Price, \$1.50.

VOLUME XXXVII, 1910. 606 pp. Price, cloth, \$4.50.

1. [97] Standards of Reasonableness in Local Freight Discriminations.
By JOHN MAURICE CLARK, Ph.D. Price, \$1.25.
2. [98] Legal Development in Colonial Massachusetts.
By CHARLES J. HILKEY, Ph.D. Price, \$1.25.
3. [99] *Social and Mental Traits of the Negro.
By HOWARD W. ODUM, Ph.D. Price, \$2.00.

VOLUME XXXVIII, 1910. 463 pp. Price, cloth, \$3.50.

1. [100] The Public Domain and Democracy.
By ROBERT TUDOR HILL, Ph.D. Price, \$2.00.
2. [101] Organismic Theories of the State.
By FRANCIS W. COKER, Ph.D. Price, \$1.50.

VOLUME XXXIX, 1910-1911. 651 pp. Price, cloth, \$4.50.

1. [102] The Making of the Balkan States.
By WILLIAM SMITH MURRAY, Ph.D. Price, \$1.50.
2. [103] Political History of New York State during the Period of the Civil War.
By SIDNEY DAVID BRUMMER, Ph.D. Price, 3.00.

VOLUME XL, 1911. 633 pp. Price, cloth, \$4.50.

1. [104] A Survey of Constitutional Development in China.
By HAWKING L. YEN, Ph.D. Price, \$1.00.
2. [105] Ohio Politics during the Civil War Period.
By GEORGE H. PORTER, Ph.D. Price, \$1.75.
3. [106] The Territorial Basis of Government under the State Constitutions.
By ALFRED ZANTZINGER REED, Ph.D. Price, \$1.75.

VOLUME XLI, 1911. 514 pp. Price, cloth, \$3.50; paper covers, \$3.00.

- [107] New Jersey as a Royal Province. By EDGAR JACOB FISHER, Ph.D.

VOLUME XLII, 1911. 400 pp. Price, cloth, \$3.00; paper covers, \$2.50.

- [108] Attitude of American Courts in Labor Cases.
By GEORGE GORHAM Groat, Ph.D.

VOLUME XLIII, 1911. 633 pp. Price, cloth, \$4.50.

1. [109] *Industrial Causes of Congestion of Population in New York City.
By EDWARD EWING PRATT, Ph.D. Price, \$2.00.
2. [110] Education and the Mores.
By F. STUART CHAPIN, Ph.D. Price, 75 cents.
3. [111] The British Consuls in the Confederacy.
By MILLEDGE L. BOWHAM, JR., Ph.D. Price, \$2.00.

VOLUMES XLIV and XLV, 1911. 745 pp.

Price for the two volumes, cloth, \$6.00; paper covers, \$5.00.

- [112 and 113] The Economic Principles of Confucius and his School.
By CHEN HUAN-CHANG, Ph.D.

VOLUME XLVI, 1911-1912. 623 pp. Price, cloth, \$4.50.

1. [114] The Ricardian Socialists. By ESTHER LOWENTHAL, Ph.D. Price, \$1.00.
2. [115] Ibrahim Pasha, Grand Vizier of Suleiman, the Magnificent.
By HESTER DONALDSON JENKINS, Ph.D. Price, \$1.00.
3. [116] *Syndicalism in France.
By LOUIS LEVINE, Ph.D. Second edition, 1914. Price, \$1.50.
4. [117] A Hoosier Village. By NEWELL LEROY SIMS, Ph.D. Price, \$1.50.

VOLUME XLVII, 1912. 544 pp. Price, cloth, \$4.00.

1. [118] The Politics of Michigan, 1865-1878. By HARRIETTE M. DILLA, Ph.D. Price, \$2.00.
2. [119] *The United States Beet Sugar Industry and the Tariff. By ROY G. BLAKEY, Ph.D. Price, \$2.00.

VOLUME XLVIII, 1912. 493 pp. Price, cloth, \$4.00.

1. [120] Isidor of Seville. By ERNEST BUEHAUT, Ph.D. Price, \$2.00.
2. [121] Progress and Uniformity in Child-Labor Legislation. By WILLIAM FIELDING OGBURN, Ph.D. Price, \$1.75.

VOLUME XLIX, 1912. 592 pp. Price, cloth, \$4.50.

1. [122] British Radicalism 1791-1797. By WALTER PHELPS HALL. Price, \$2.00.
2. [123] A Comparative Study of the Law of Corporations. By ARTHUR K. KUHN, Ph.D. Price, \$1.30.
3. [124] *The Negro at Work in New York City. By GEORGE E. HAYNES, Ph.D. Price, \$1.25.

VOLUME L, 1911. 481 pp. Price, cloth, \$4.00.

1. [125] *The Spirit of Chinese Philanthropy. By YAI YUE TSU, Ph.D. Price, \$1.00.
2. [126] *The Allen in China. By VI. KVIN WELINGTON KOO, Ph.D. Price, \$2.50.

VOLUME LI, 1912. 4to. Atlas. Price: cloth, \$1.50; paper covers, \$1.00.

1. [127] The Sale of Liquor in the South. By LEONARD S. BLAKEY, Ph.D.

VOLUME LII, 1912. 489 pp. Price, cloth, \$4.00.

1. [128] *Provincial and Local Taxation in Canada. By SOLOMON VINEBERG, Ph.D. Price, \$1.50.
2. [129] *The Distribution of Income. By FRANK HATCH STREIGHTOFF, Ph.D. Price, \$1.50.
3. [130] *The Finances of Vermont. By FREDERICK A. WOOD, Ph.D. Price, \$1.00.

VOLUME LIII, 1913. 789 pp. Price, cloth, \$4.50; paper, \$4.00.

- [131] The Civil War and Reconstruction in Florida. By W. W. DAVIS, Ph.D.

VOLUME LIV, 1913. 604 pp. Price, cloth, \$4.50.

1. [132] *Privileges and Immunities of Citizens of the United States. By ARNOLD JOHNSON LEE, Ph.D. Price, 75 cents.
2. [133] The Supreme Court and Unconstitutional Legislation. By BLAINE FREE MOORE, Ph.D. Price, \$1.00.
3. [134] *Indian Slavery in Colonial Times within the Present Limits of the United States. By ALMON WHEELER LAUBER, Ph.D. Price, \$3.00.

VOLUME LV, 1913. 665 pp. Price, cloth, \$4.50.

1. [135] *A Political History of the State of New York. By HOMER A. STEBBINS, Ph.D. Price, \$4.00.
2. [136] *The Early Persecutions of the Christians. By LEON H. CANFIELD, Ph.D. Price, \$1.50.

VOLUME LVI, 1913. 406 pp. Price, cloth, \$3.50.

1. [137] Speculation on the New York Stock Exchange, 1904-1907. By ALGERNON ASHBURNER OSBORNE. Price, \$1.50.
2. [138] The Policy of the United States towards Industrial Monopoly. By OSWALD WHITMAN KNAUTH, Ph.D. Price, \$2.00.

VOLUME LVII, 1914. 670 pp. Price, cloth, \$4.50.

1. [139] *The Civil Service of Great Britain. By ROBERT MOSES, Ph.D. Price, \$2.00.
2. [140] The Financial History of New York State. By DON C. SOWERS. Price, \$2.50.

VOLUME LVIII, 1914. 684 pp. Price, cloth, \$4.50; paper, \$4.00.

- [141] Reconstruction in North Carolina. By J. G. DE ROULHAC HAMILTON, Ph.D.

VOLUME LIX, 1914. 625 pp. Price, cloth, \$4.50.

1. [142] The Development of Modern Turkey by means of its Press. By AHMED EMIN, Ph.D. Price, \$1.00.
2. [143] The System of Taxation in China, 1614-1911. By SHAO-KWAN CHEN, Ph.D. Price, \$1.00.
3. [144] The Currency Problem in China. By WEN PIN WEI, Ph.D. Price, \$1.25.
4. [145] *Jewish Immigration to the United States. By SAMUEL JOSEPH, Ph.D. Price, \$1.50.

VOLUME LX. 1914. 516 pp. Price, cloth, \$4.00.

1. [146] *Constantine the Great and Christianity.
By CHRISTOPHER BUSH COLEMAN, Ph.D. Price, \$2.00.
2. [147] The Establishment of Christianity and the Proscription of Pa-
ganism.
By MAUD ALINE HUTTMAN, Ph.D. Price, \$2.00.

VOLUME LXI. 1914. 496 pp. Price, cloth, \$4.00.

1. [148] *The Railway Conductors: A Study in Organized Labor.
By EDWIN CLYDE ROBBINS. Price, \$1.50.
2. [149] *The Finances of the City of New York.
By YIN-CH'U MA, Ph.D. Price, \$2.50.

VOLUME LXII. 1914. 414 pp. Price, cloth, \$3.50.

- [150] The Journal of the Joint Committee of Fifteen on Reconstruction.
39th Congress, 1865-1867.
By BENJAMIN B. KENDRICK, Ph.D. Price, \$3.00.

VOLUME LXIII. 1914. 561 pp. Price, cloth, \$4.00.

1. [151] Emile Durkheim's Contributions to Sociological Theory.
By CHARLES ELMER GEHLKE, Ph.D. Price, \$1.50.
2. [152] The Nationalization of Railways in Japan.
By TOSHIHARU WATARAI, Ph.D. Price, \$1.25.
3. [153] Population: A Study in Malthusianism.
By WARREN S. THOMPSON, Ph.D. Price, \$1.75.

VOLUME LXIV. 1915. 646 pp. Price, cloth, \$4.50.

1. [154] *Reconstruction in Georgia.
By C. MILDRED THOMPSON, Ph.D. Price, 3.00.
2. [155] *The Review of American Colonial Legislation by the
Council.
By ELMER EECHEER RUSSELL, Ph.D. Price, \$1.75.

VOLUME LXV. 1915. 524 pp. Price, cloth, \$4.00.

1. [156] *The Sovereign Council of New France
By RAYMOND DU BOIS CAHALL, Ph.D. Price, \$2.25.
2. [157] *Scientific Management (2nd. ed. 1918).
By HORACE B. DRURY, Ph.D. Price, \$2.00.

VOLUME LXVI. 1915. 655 pp. Price, cloth, \$4.50.

1. [158] *The Recognition Policy of the United States.
By JULIUS GOEBEL, JR., Ph.D. Price, \$2.00.
2. [159] Railway Problems in China.
By CHIH HSU, Ph.D. Price, \$1.50.
3. [160] *The Boxer Rebellion.
By PAUL H. CLEMENTS, Ph.D. Price, \$2.00.

VOLUME LXVII. 1916. 538 pp. Price, cloth, \$4.00.

1. [161] *Russian Sociology.
By JULIUS F. HECKER, Ph.D. Price, \$2.50.
2. [162] State Regulation of Railroads in the South.
By MAXWELL FERGUSON, A. M., LL.B. Price, \$1.75.

VOLUME LXVIII. 1916. 518 pp. Price, cloth, \$4.50.

- [163] The Origins of the Islamic State.
By PHILIP K. HITTI, Ph.D. Price, \$4.00.

VOLUME LXIX. 1919. 489 pp. Price, cloth, \$4.00.

1. [164] Railway Monopoly and Rate Regulation.
By ROBERT J. MCFALL, Ph.D. Price, \$2.00.
2. [165] The Butter Industry in the United States.
By EDWARD WIEST, Ph.D. Price, \$2.00.

VOLUME LXX. 1916. 540 pp. Price, cloth, \$4.50.

- [166] Mohammedan Theories of Finance
By NICOLAS P. AGHNIDES, Ph.D. Price, \$4.00.

VOLUME LXXI. 1916. 476 pp. Price, cloth, \$4.00.

1. [167] The Commerce of Louisiana during the French Regime, 1699-1763.
By N. M. MILLER SURRHY, Ph.D. Price, \$3.50.

VOLUME LXXII. 1916. 542 pp. Price, cloth, \$4.50.

1. [168] American Men of Letters: Their Nature and Nurture.
By EDWIN LEAVITT CLARKE, Ph.D. Price, \$1.50.
2. [169] The Tariff Problem in China.
By CHIN CHU, Ph.D. Price, \$1.50.
3. [170] The Marketing of Perishable Food Products.
By A. B. ADAMS, Ph.D. Price, \$1.50.

VOLUME LXXIII. 1917. 616 pp. Price, cloth, \$4.50.

1. [171] *The Social and Economic Aspects of the Chartist Movement.
By FRANK F. ROSENBLATT, Ph.D. Price, \$2.00
2. [172] *The Decline of the Chartist Movement.
By PRESTON WILLIAM SLOSSON, Ph.D. Price, \$2.00.
3. [173] Chartism and the Churches. By H. U. FAULKNER, Ph.D. Price, \$1.25.

VOLUME LXXIV. 1917. 546 . Price, cloth, \$4.50.

1. [174] The Rise of Ecclesiastical Control in Quebec.
By WALTER A. RIDDELL, Ph.D. Price, \$1.75.
2. [175] Political Opinion in Massachusetts during the Civil War and Reconstruction.
By EDITH ELLER WARE, Ph.D. Price, \$1.75.
3. [176] Collective Bargaining in the Lithographic Industry.
By H. E. HOAGLAND, Ph.D. Price, \$1.00

VOLUME LXXV. 1917. 410 pp. Price, cloth, \$4.00.

- An extra-illustrated and bound volume is published at \$5.00.
1. [177] New York as an Eighteenth Century Municipality. Prior to 1731.
By ARTHUR EVERETT PETERSON, Ph.D. Price, \$2.00.
 2. [178] New York as an Eighteenth Century Municipality. 1731-1776.
By GEORGE WILLIAM EDWARDS, Ph.D. Price, \$2.00.

VOLUME LXXVI. 1917. 489 pp. Price, cloth, \$4.00.

1. [179] *Economic and Social History of Chowan County, North Carolina.
By W. SCOTT BOYCE, Ph.D. Price, \$2.50.
2. [180] Separation of State and Local Revenues in the United States.
By MABEL NEWCOMER, Ph.D. Price, \$1.75.

VOLUME LXXVII. 1917. 473 pp. Price, cloth, \$4.00.

- [181] American Civil Church Law. By CARL ZOLLMANN, LL.B. Price, \$3.50

VOLUME LXXVIII. 1917. 647 pp. Price, cloth, \$4.50.

- [182] The Colonial Merchants and the American Revolution.
By ARTHUR MEIER SCHLESINGER, Ph.D. Price, \$4.00.

VOLUME LXXIX. 1917-1918. 535 pp. Price, cloth, \$4.50.

1. [183] Contemporary Theories of Unemployment and Unemployment Relief.
By FREDERICK C. MILLS, Ph.D. Price, \$1.50.
2. [184] The French Assembly of 1848 and American Constitutional Doctrine.
By EUGENE NEWTON CURTIS, Ph.D. Price, \$3.00.

VOLUME LXXX. 1918. 448 pp. Price, cloth, \$4.00.

1. [185] *Valuation and Rate Making. By ROBERT L. HALE, Ph.D. Price, \$1.50.
2. [186] The Enclosure of Open Fields in England.
By HARRIET BRADLEY, Ph.D. Price, \$1.25.
3. [187] The Land Tax in China. By H. L. HUANG, Ph.D. Price, \$1.50.

VOLUME LXXXI. 1918. 601 pp. Price, cloth \$4.50.

1. [188] Social Life in Rome in the Time of Plautus and Terence.
By GEORGIA W. LEFFINGWELL, Ph.D. Price, \$1.25.
2. [189] *Australian Social Development.
By CLARENCE H. NORTHCOTT, Ph.D. Price, \$2.50.
3. [190] *Factory Statistics and Industrial Fatigue.
By PHILIP S. FLORENCE, Ph.D. Price, \$1.25.

VOLUME LXXXII. 1918-1919. 576 pp. Price, cloth, \$4.50.

1. [191] New England and the Bavarian Illuminati.
By VERNON STAUFFER, Ph.D. Price, \$3.00.
2. [192] Resale Price Maintenance. By CLAUDIUS T. MURCHISON, Ph.D. Price, \$1.50.

VOLUME LXXXIII. 1919. 432 p . Price, cloth, \$4.00.

- [193] The I. W. W. By PAUL F. BRISSENDER, Ph.D. Price, \$3.50

VOLUME LXXXIV. 1919. 534 pp. Price, cloth, \$4.50.

1. [194] The Royal Government in Virginia, 1624-1775.
By PERCY SCOTT FLIPPIN, Ph.D. Price, \$3.00.
2. [195] Hellenic Conceptions of Peace. By WALLACE E. CALDWELL, Ph.D. Price, \$1.25.

VOLUME LXXXV. 1919. 450 pp. Price, cloth, \$4.00.

1. [196] The Religious Policy of the Bavarian Government during the Napoleonic Period.
By CHESTER P. HIGBY, Ph.D. Price, \$3.00.
2. [197] Public Debts of China. By F. H. HUANG, Ph.D. Price, \$1.00.

VOLUME LXXXVI. 1919. 460 pp. Price, cloth, \$4.00.

- [198] The Decline of Aristocracy in the Politics of New York.
By DIXON RYAN FOX, Ph.D. Price, \$3.50.

VOLUME LXXXVII. 1919. 451 pp. Price, cloth, \$4.00.

- [199] Foreign Trade of China. By CHONG SU SEE, Ph.D. Price, \$3.50

VOLUME LXXXVIII. 1919. 444 pp. Price, cloth, \$4.00.

1. [200] The Street Surface Railway Franchises of New York City.
By HARRY J. CARMAN, Ph.D. Price, \$2.00.
2. [201] Electric Light Franchises in New York City.
By LEONORA ARENT, Ph.D. Price, \$1.50.

VOLUME LXXXIX. 1919. 558 pp. Price, cloth, \$5.00

1. [202] Women's Wages.
By EMILIE J. HUTCHINSON, Ph.D. Price, \$1.50.
2. [203] The Return of the Democratic Party to Power in 1884.
By HARRISON COOK THOMAS, Ph.D. Price, \$2.25.
3. [204] The Paris Bourse and French Finance.
By WILLIAM PARKER, Ph.D. Price, \$1.00.

VOLUME XC. 1920. 547 pp. Price, cloth, \$5.25.

1. [205] Prison Methods in New York State.
By PHILIP KLEIN, Ph.D. Price, \$3.50.
2. [206] India's Demand for Transportation.
By WILLIAM E. WELD, Ph.D. Price, \$1.25.

VOLUME XCI. 1920. 626 pp. Price, cloth, \$6.25

1. [207] *The Influence of Oversea Expansion on England to 1700.
By JAMES E. GILLESPIE, Ph.D. Price, \$3.00.
2. [208] International Labor Legislation.
By I. F. AYUSAWA, Ph.D. Price, \$2.75.

VOLUME XCII. 1920.

- [209] The Public Life of William Shirley. By GEORGE A. WOOD. (*In press*).

VOLUME XCIII. 1920.

1. [210] The English Reform Bill of 1867.
By JOSEPH H. PARK. (*In press*).
2. [211] The Policy of the United States as Regards Intervention.
By CHARLES E. MARTIN. (*In press*).

*The price for each separate monograph is for paper-covered copies; separate monographs marked *, can be supplied bound in cloth, for 75c. additional. All prices are net.*

The set of ninety-one volumes, covering monographs 1-208, is offered, bound, for \$315; except that Volumes II, III, IV, and VII can be supplied only in part, Volume II No. 1, Volume III No. 2, Volume IV No. 3, and Volume VII No. 2, being out of print. Volumes II, III, and IV, as described in the last sentence, and Volume XXV can now be supplied only in connection with complete sets, but the separate monographs of each of these volumes are available unless marked "not sold separately"

For further information, apply to

Messrs. LONGMANS, GREEN & CO., New York.

London: P. S. KING & SON, Ltd., Orchard House, Westminster.

**RETURN TO the circulation desk of any
University of California Library**

or to the

NORTHERN REGIONAL LIBRARY FACILITY

University of California
Richmond Field Station, Bldg. 400
1301 South 46th Street
Richmond, CA 94804-4698

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS

To renew or recharge your library materials, you may
contact NRLF 4 days prior to due date at (510) 642-6233

DUE AS STAMPED BELOW

AUG 21 2008

FEB 10 1970

LD9-30m-12,'76(T255588)4185-S-87



446604

H31

C7

v. 95

UNIVERSITY OF CALIFORNIA LIBRARY

